WESTERN INDUSTRY

• Manpower leaves war behind, looks ahead to industry. First transport returning direct from Japan lands at a West Coast port.

Twenty-Five Cents VOLUME X NUMBER 11 November, 1945

TENS OF THOUSANDS of VICTOR hand cutting torches have been chosen by America's largest shipyards, steel mills, foundries, scrap yards, and wherever flame cutting is used. Over three decades have proved VICTOR torches to be most suitable for any useful fuel gas and for long, trouble-free and economical ownership.

VICTOR EQUIPMENT CO.
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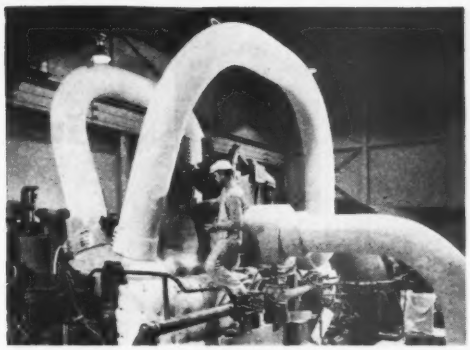
SAN FRANCISCO 7, CALIFORNIA

VICTOR

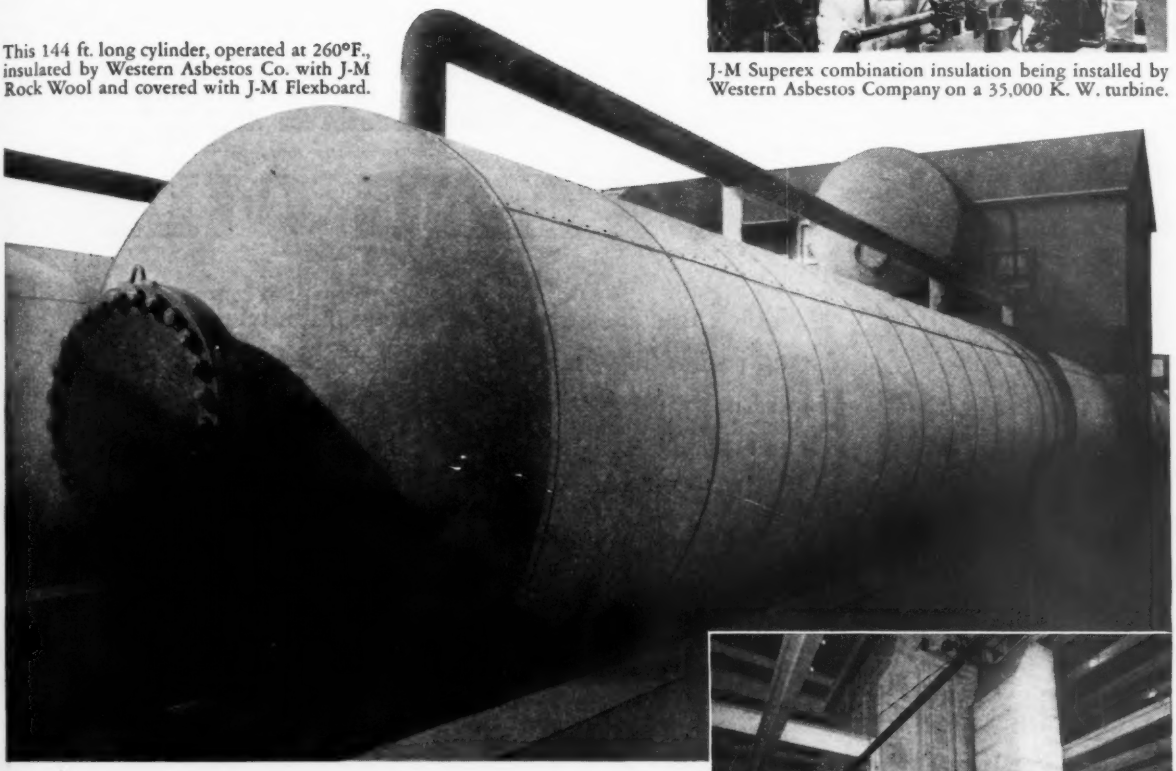
Ad 126

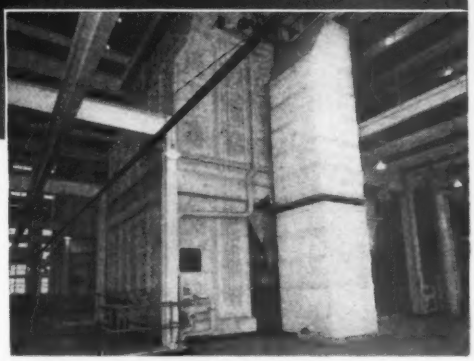
OVER 120 YEARS OF INSULATION EXPERIENCE



J-M Superex combination insulation being installed by Western Asbestos Company on a 35,000 K. W. turbine.

This 144 ft. long cylinder, operated at 260°F., insulated by Western Asbestos Co. with J-M Rock Wool and covered with J-M Flexboard.





Air heater casing insulated with J-M 85% Magnesia blocks and finished with a covering of asbestos cement.

Installing Rock Cork. For cold room insulation J-M Rock Cork sheets are highly efficient and economical.

...that's why Western Asbestos Co. can offer more on any insulation job!

THE COMBINED EXPERIENCE of Western Asbestos Co. and Johns-Manville Corporation of over 120 years—makes available to you a great reservoir of practical knowledge, gained in thousands of insulation installations of every conceivable type.

Here is a "team" who through the development of new and improved materials, extensive engineering and field experience, and craftsmanship in application, have established themselves as the leading choice in the insulation field.

That's why Western Asbestos Co. can offer *more* from engineering to application, on *any* insulation job. It is your complete assurance of a job performed with utmost speed, precision and economy. Your insulation requirements can be accurately determined by a survey our representative will be glad to make.

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EDITORIAL COMMENT

Not a Secondary Problem

HOW LONG, O Lord, how long? is the doleful complaint of top management about the apparent on-coming tide of labor encroachment on management's territory. But it is not an ebbing and flowing tide at all. It is a current that cannot be dammed up by mere unyielding resistance, that on the other hand requires proper channeling, and when so allowed to find its rightful course the current can become beneficent to all.

Apparently the primary reason why top management has been so highly unsuccessful, for the most part, in working out labor problems is that it has been only production-minded and sales-minded. Untold pains are taken to ascertain how to make or sell a product, but the field of industrial relations, where the fate of a business can be equally well turned into either success or failure, is given only minor consideration today and in past years practically none at all. Management must realize that the labor troubles of today are the fruit of this neglect, and that it will take a masterful effort over a considerable period of time to bring about satisfactory labor conditions.

Vice-presidents in charge of production and sales are many and are highly compensated, but it is almost unheard of to put an industrial relations man on the same footing. Competent industrial relations men have to fight the indifference and ignorance of their employers as much as they have to combat union officials and shop stewards. There are many good industrial relations men who deserve far more authority than they are given today, but at the same time there are others who are only theorists and amateurs. Top management will have to learn to differentiate between the two classes.

Obviously no one can do a job in industrial relations unless he fully understands his company's business, and for that reason the industrial relations managers of the future perhaps should be recruited from the operating department. But in any case it should be recognized that they can make as much money for the company as the sales or production managers and be chosen and compensated accordingly.

Export Opportunities

ENTERING the export market may seem like a formidable undertaking for the small manufacturer in the West. Actually it does not involve heavy financial commitments, trips to foreign countries or difficult sales campaigns.

Established exporters in our Pacific Coast cities perform the service of finding the right market, making the actual sales and arranging the financing, so the manufacturer takes no risk. All that the would-be exporter has to do is to make a connection with a reliable export firm and manufacture what they want.

Exporters today are looking for merchandise which in many cases is unobtainable because manufacturers are unwilling to turn their attention from the domestic field. Some American manufacturers decline to export, in spite of attractive foreign possibilities, for fear their goods will eventually be supplanted by cheaper stuff from other countries. While this is often true, there are other items on which a foreign firm cannot compete because of the superiority of American design and workmanship.

The export field is not one for in-and-outers. Foreign buyers quickly become disgusted with suppliers who crave foreign trade when domestic business is dull but lose interest when the home picture changes. But for the manufacturer who is looking for a steady, though perhaps small, sales outlet to help stabilize his business, exporting is a sales opportunity he cannot well afford to overlook.

WESTERN INDUSTRY

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OUR COVER PICTURE

• A good part of industry's future manpower supply is either still in uniform or just getting out of it. The picture shows the General John J. Pope, first transport to return direct from Japan, landing at San Francisco with 5,090 men from the First Cavalry and 43rd Infantry Division aboard.

CCA

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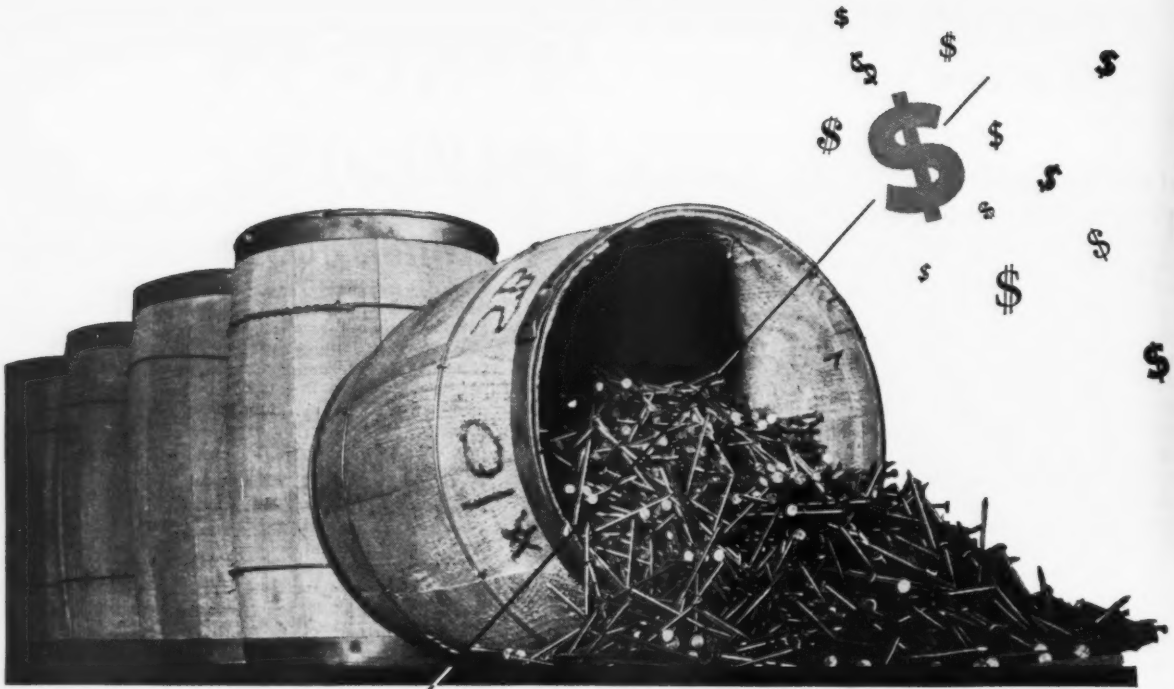

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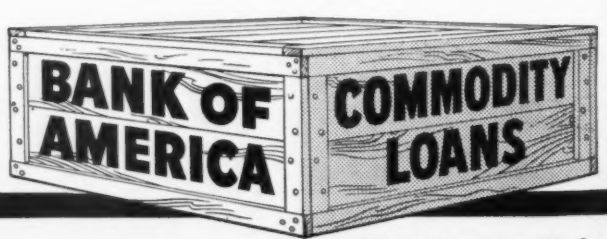

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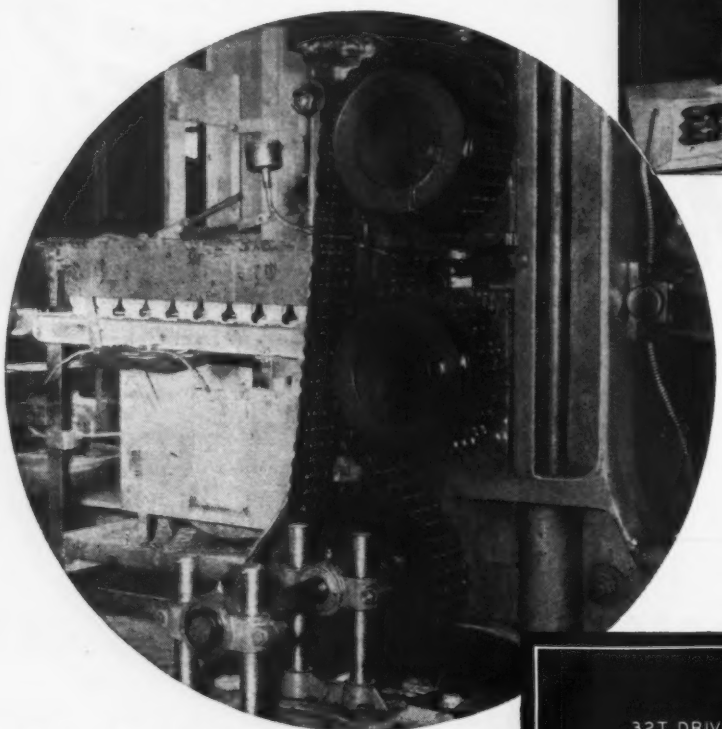
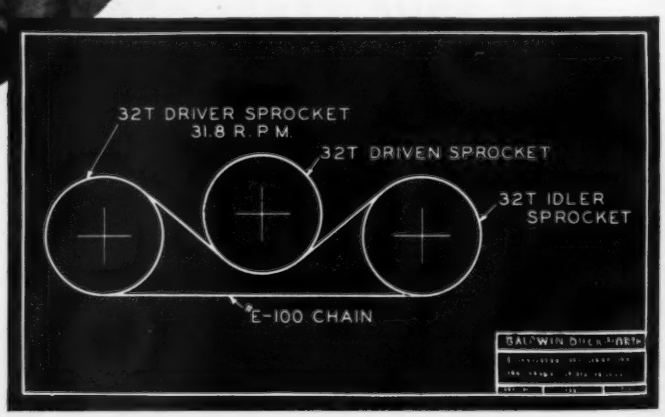
Do you want POSITIVE Power Transmission?

① DO YOU NEED a drive that transmits positive power . . . a drive that doesn't slip or fail in emergencies? Here it is—Baldwin-Rex Roller chain belts.



② THIS CALENDER DRIVE, for example, has the extra strength and stamina that a positive drive needs. The triple strand of Baldwin-Rex doing the driving keeps the power flowing. There's no slipping here to waste power and time . . . no jerky, uneven power transmission. Turning those heavy rolls is child's play for husky Baldwin-Rex. It really stands up in tough service.



③ IT'S A HUSKY DRIVE as this drive arrangement shows. Whenever power is to be transmitted economically and efficiently without waste, Baldwin-Rex Roller chain belts can do the job. They have high shock-absorbing ability and are not adversely affected by dust or grease. Their ease of installation and effective operation regardless of center distances make them ideal for all types of power transmission work.

For catalogs on Baldwin-Rex Roller chain belts or competent information on your specific drive problems, write **BALDWIN-DUCKWORTH** *Division of* **CHAIN BELT COMPANY,** *352 Plainfield Street, Springfield 2, Mass., or call your local Baldwin-Rex representative.*

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In Cleaning...

Uncontrolled Action = Danger!

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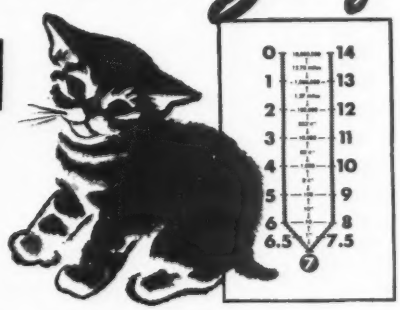

In chemical cleaning and processing, which is our business, as in everything else where the natural laws of chemistry and physics are involved, action and reaction should be kept under control.

An industrial cleaning compound must have real strength with plenty of reserve power to do a good job consistently, day after day; but added strength is not always the answer to unsatisfactory results. You need the *right kind of strength* held in at the exact degree of cleaning power which is best for the particular job in hand. This calls for an accurate method of control—Kelite pH Control!

By constant adherence to the pH chart, which accurately measures the cleaning power needed for every type of soil removal and shows the exact limits of safety for the surface being cleaned, Kelite has taken the guesswork out of chemical cleaning and processing . . . provided *the key to maximum efficiency.*

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Wherever there's dirt, grease, grime, scale, corrosion or any undesirable deposit or contamination, Kelite materials with pH Control can solve the cleaning problem.

Executive Offices: 909 East 60th Street, Los Angeles 1. Manufacturing plants in Los Angeles, Dallas, Chicago, and Perth Amboy. Branches in principal cities. "Kelite" Reg. U. S. Pat. Off., Chart copyrighted 1942 by Kelite Products, Inc.

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Get it out at half cost! LOWER

ARE YOU

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FOR THIS

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Yes, P&H Hevi-Lift Hoists provide speed and ease with "thru-the-air" handling — traveling *direct*, above aisle congestion, they move your materials from raw to finished state without costly rehandling.

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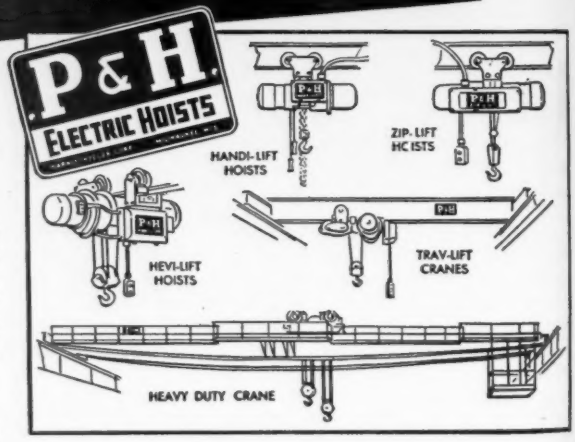

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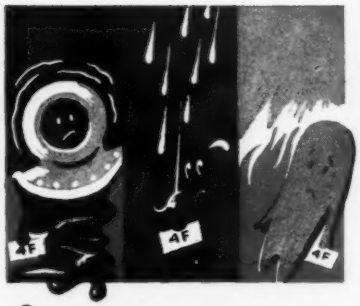
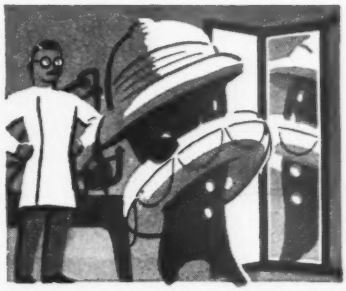
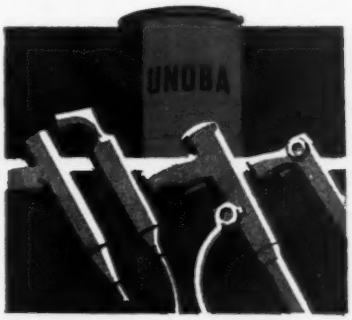


2. Calcium base grease is water-resistant but has a low melting point. Sodium base resists heat but is not waterproof. Aluminum base withstands both but jells at high temperatures.

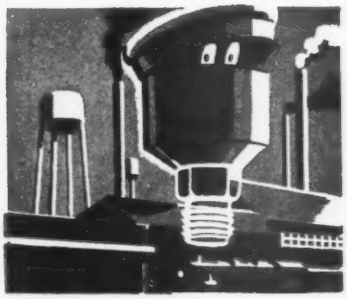


3. There was an obvious need for an all-around grease that was heatproof *and* waterproof. So, Union Oil Company developed the sensational new *barium* base grease called UNOBA.

4. UNOBA gives effective lubrication at temperatures from 0°F. to 250°F. and sticks to metal surfaces with a tenacity that boiling water can't break.



5. This unique combination of properties qualifies UNOBA as an all-purpose lubricant—one that will fill practically all your grease requirements with excellent results.



6. Try some of this heatproof, waterproof, all-purpose grease. It will protect against rust, prevent excessive wear, and prolong the life of your equipment.

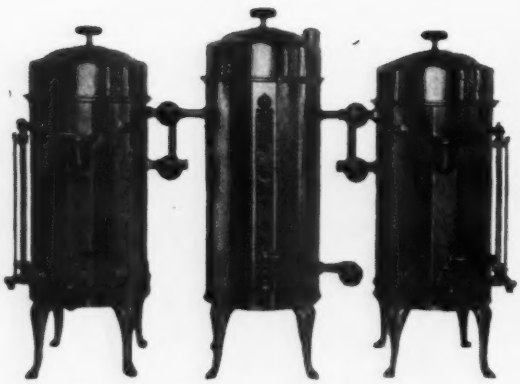
Upon request your Union oilman—or the Union Oil Company, Los Angeles 14, Calif.—will gladly furnish more information and deliver a supply.

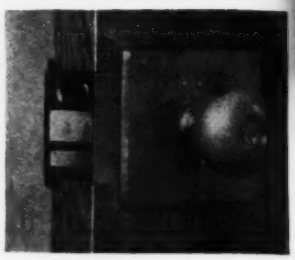
UNOBA

UNION 76

Another **UNION OIL** *Success-Tested Product*

Remember





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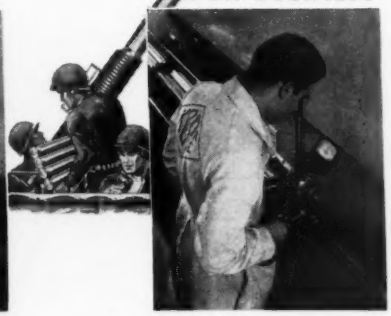

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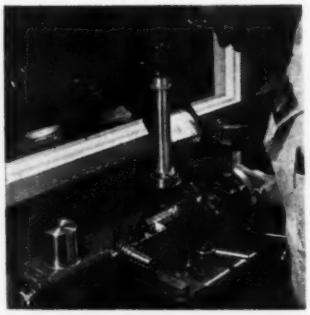

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A bank will not have the problems of an insurance company. A bus line will demand forms that a grocery store finds unnecessary. A corporation with many branches requires a treatment all its own. Moore knows this, and designs accordingly.

The Moore representative is a form specialist. He will study your business forms, in co-operation with members of your organization. Then he will recommend for your needs.

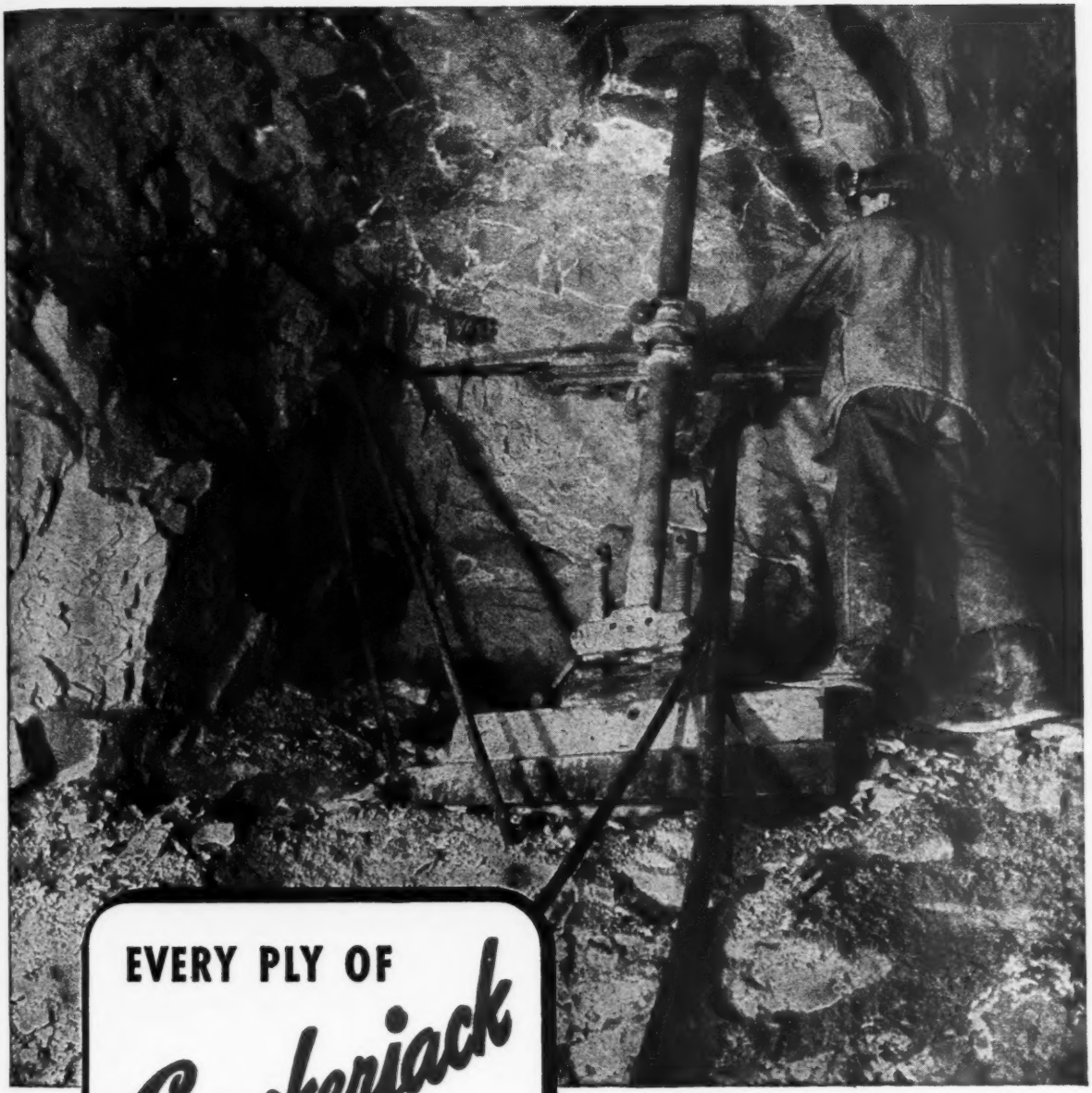
The ten companies below have long been under Moore ownership. Now they combine under the Moore name — without change in ownership, management or policy.

To find out, without any obligation, what Moore can do for your business, get in touch with the nearest Moore division, as listed below, or its local office. *Moore is ready to supply you with everything from a simple sales book to the most elaborate forms.*

AMERICAN SALES BOOK CO., INC., NIAGARA FALLS AND ELMIRA, N. Y.
PACIFIC MANIFOLDING BOOK CO., INC., EMERYVILLE; LOS ANGELES, CALIF.
GILMAN FANFOLD CORP., NIAGARA FALLS, N. Y.
COSBY-WIRTH MANIFOLD BOOK CO., MINNEAPOLIS, MINN.
MOORE RESEARCH & SERVICE CO., INC., NIAGARA FALLS, N. Y.
SOUTHERN BUSINESS SYSTEMS, INC., ORLANDO, FLA.
MOORE BUSINESS FORMS, INC. (New Southern Div.), DALLAS, TEX.; ATLANTA, GA.
In Canada—Moore Business Forms, Ltd., succeeding Burt Business Forms, Ltd., Toronto
Western Sales Book Co., Ltd., Winnipeg and Vancouver
National Sales Check Book Co., Ltd., Montreal

MOORE BUSINESS FORMS, INC.

ADV. BY N. W. AYER



EVERY PLY OF *Crackerjack* HOSE IS PROTECTED AGAINST WEAR and TEAR

Abrasion and snagging hazards are minimized with *Crackerjack* air and water hose. Hose cover compounds have been developed that give unusually good service in underground or surface work. Adhesion is excellent. The plies hang together—and above all, *Crackerjack* is resistant to the effects of oil, grease and heat... both internally and externally. Built to withstand required pressures. Available in all sizes... either standard or special construction to fit the job.

The AMERICAN RUBBER *Mfg. Co.*
OAKLAND, CALIFORNIA
MANUFACTURERS OF RUBBER PRODUCTS FOR INDUSTRY

THE AMERICAN RUBBER MFG CO. · OAKLAND CALIF ·

HANDLING COSTS GO DOWN
with this versatile crane on the job!

THE NEW MODEL D
Full-Revolving HANDI-CRANE

- **Full-Revolving Boom**
  swings in a complete 360° circle... picks up or spots loads in any direction with ease.
- **High Mobility**
  Travels at speeds up to 15 m. p. h.; compact—works easily in narrow aisles, inside cars, etc.
- **Rugged Construction**
  Extra heavy frame transmits all crane load directly to axle... positively no strain placed on tractor housings.
- **Easier Steering**
  Automatic "booster" cylinder makes steering easy even when traveling with heavy loads.
- **High Capacity**
  Handles loads from 1,500 to 5,000 lbs., depending on working radius.

New Model D Bulletin *gives complete information on this versatile load handler; write or wire for your free copy* **now.**

INDUSTRIAL EQUIPMENT COMPANY
10911 RUSSETT STREET, OAKLAND 3, CALIFORNIA • 4441 SANTA FE AVENUE, LOS ANGELES 11, CALIFORNIA

SQUARE D AND THE NATION'S INDUSTRY

Radio

From coast to coast over the nation's radio networks, it's SQUARE D —

Typical Square D circuit type power distribution switch board as installed at radio broadcasting station.

for CONTINUOUS ELECTRICAL DISTRIBUTION

KNX—Columbia Broadcasting System, Hollywood, California

KHJ—Mutual Broadcasting System, Hollywood, Calif.

KFI—National Broadcasting System, Hollywood, California

The red light on the studio wall blinks for silence. Artists take their positions in front of the battery of "mikes." Their eyes are on the engineer in the control room. Suddenly he gives the arm signal... *you're on the air!*

All of us know that behind the studio microphones a corps of technical radio engineers are watching the many electrical installations which make radio the twentieth century miracle.

Square D Electrical Equipment is providing *continuous electrical distribution*, not only to the leading networks, but to hundreds of local stations throughout the United States as well.

Especially important to radio stations is the Square D Circuit Breaker type power distribution switch board, designed to keep radio reception on an even keel from microphone to loudspeaker. And there's a reason why it does just that! Square D is the symbol for electrical control, perfectly applied. The name vouches for correct design, sound engineering, precise workmanship and trouble-free operation.

Your electrical problems can be easily solved by calling your nearest Square D Field Engineer or Distributor. His expert knowledge and advice will be both practical and economical.

SQUARE D COMPANY

LOS ANGELES 21

SAN FRANCISCO 3 • SEATTLE 1 • DENVER 4 • DETROIT 11 • MILWAUKEE 2

bust the RUST TRUST

with new SHELL ENSIS RUST PREVENTIVES

HAVE YOU EVER tried to figure *your own* losses from rust? Ever added up the damage to equipment . . . materials . . . finished products . . . the cost of wasted time all along the line? Chances are, the total would stagger you.

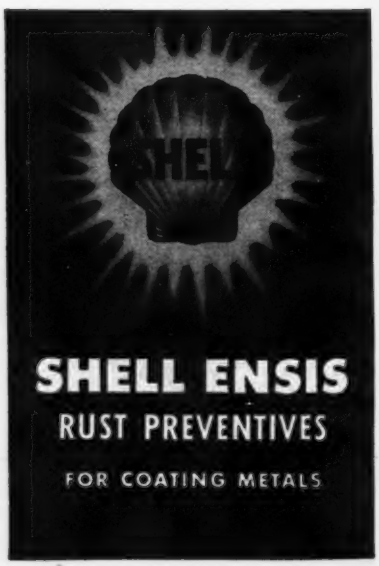
For years American industry has paid tribute to demon RUST — a Billion Dollars annually — putting up with rust as a necessary evil.

Now Shell offers a way to put this industrial racketeer out of business — out of *your* business. It's the new line of Shell Ensis Rust Preventives for coating metals.

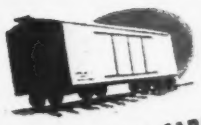
The new Ensis Oils are fortified with two new groups of additives. One group traps rust-provoking moisture in the air, emulsifies it, keeps it from reaching the metal. The other — suspended in the oil — gives it thicker film and *extra* mechanical rust-protection.

Ensis Rust Preventives come in several grades, designed to protect against exposures ranging from outdoor storage to mild humidity conditions encountered in the factory between machining operations.

No matter what your rust problem, there's a grade of Ensis that will help you. Call the Shell man now! Ask him to recommend the exact grade of Ensis Rust Preventive for your need. Shell Oil Company, *Incorporated.*



6 IDEAS IN STEEL

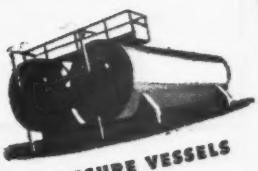


REFRIGERATOR CARS

STEEL BUILDINGS

SPECIAL STRUCTURES
Palomar Telescope Dome

DAM TRESTLES



PRESSURE VESSELS

DRUM GATES

Of the many and varied uses of steel, six are presented here to show the kind of jobs Consolidated Steel is prepared to help you plan and build now.

If your construction plans call for precision steel fabrication, Consolidated Steel is ready to offer you capable, immediate service. Address Consolidated Steel Corporation, Los Angeles 22, California; or Orange, Texas.

Consolidated Steel

FABRICATORS
ENGINEERS
CRAFTSMEN

LEADERS IN THE WEST AND SOUTH

Congratulations

FULLER & SMITH & ROSS

Of the 347,991 pages of business paper advertising placed in 1944, Fuller & Smith & Ross released 11,361 to lead the field. With an increase of nearly 100% over 1943, the McCarty Company placed 24th in the national figures.

THE recently released figures on trade publication space placed in 1944 with 466 advertising agencies reporting, carry at the very top of a noteworthy list, the name Fuller & Smith & Ross. ¶ Public recognition of this achievement must be gratifying indeed to all staff members who helped make it possible and as one small segment of the American advertising scene, we offer our hearty congratulations. ¶ Here on the West Coast, by finishing 24th in the overall agency rating, we of The McCarty Company are signally honored to occupy the same position *sectionally* as that enjoyed by Fuller & Smith & Ross *nationally*, and we are happy to share with them the obligations and responsibilities of such leadership. ¶ This position of established leadership in pages of Business Paper advertising placed, implies a wide knowledge of many advertising skills and techniques, translated into a high degree of satisfactory client service. Of even greater significance, we think, it fairly shouts that in the structure of American marketing methods, Industrial advertising again has demonstrated *its* right to a place of first importance.

THE McCARTY COMPANY

ESTABLISHED 1919 *ADVERTISING*

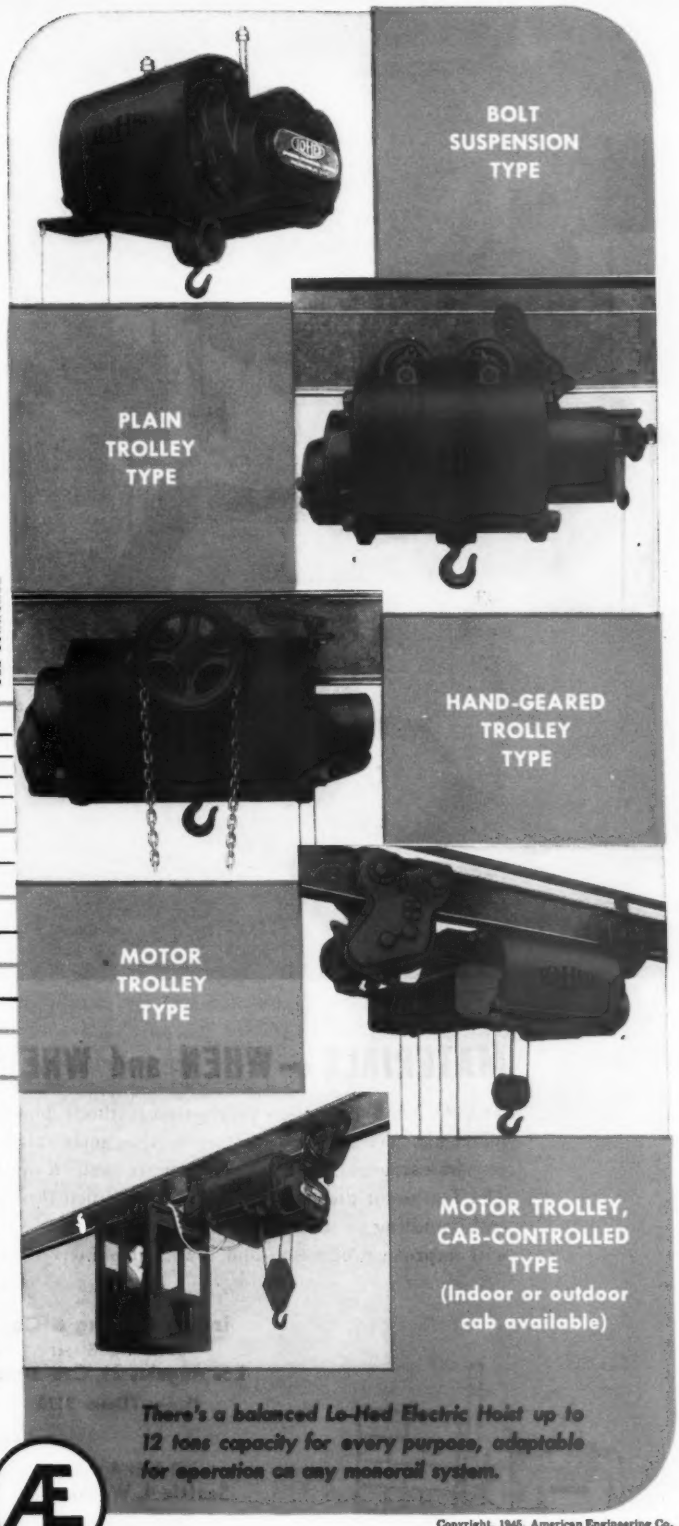
LOS ANGELES •• SAN FRANCISCO •• SEATTLE •• PITTSBURGH •• DALLAS

THERE'S A LO-HED ELECTRIC HOIST for every LIFT and HAUL

CHECK YOUR JOB—PICK YOUR TYPE FROM THIS EASY-READING CHART

TYPES OF LO-HED HOISTS

		Bolt Suspension	Plain Trolley	Hand-Geared Trolley	Motor Trolley	Motor Trolley Cab Controlled
HAUL (Distance)	No Haul	X				
	Very Short Haul		X			
	Short Haul			X		
	Long Haul				X	
	Very Long Haul					X
HAUL (Repetition)	Often Repeated			X	X	X
	Seldom Repeated		X	X	X	X
HAUL (Speed)	Important				X	X
	Secondary		X	X		
LOAD	Light	X	X	X	X	X
	Heavy	X	X	X	X	X
MANY BAYS TO BE SERVED					X	X



No matter what your lifting and hauling requirements are, you'll find it a very simple matter to select the means of suspension from among the five standard types of Lo-Hed electric hoists available. In addition to these types, Lo-Hed is also made in a wide variety of capacities, hoisting speeds and lifts. Consult your nearest Lo-Hed hoist representative or get in touch with us at once.

Lo-Hed Representatives in Western, Northwestern and Mountain States:

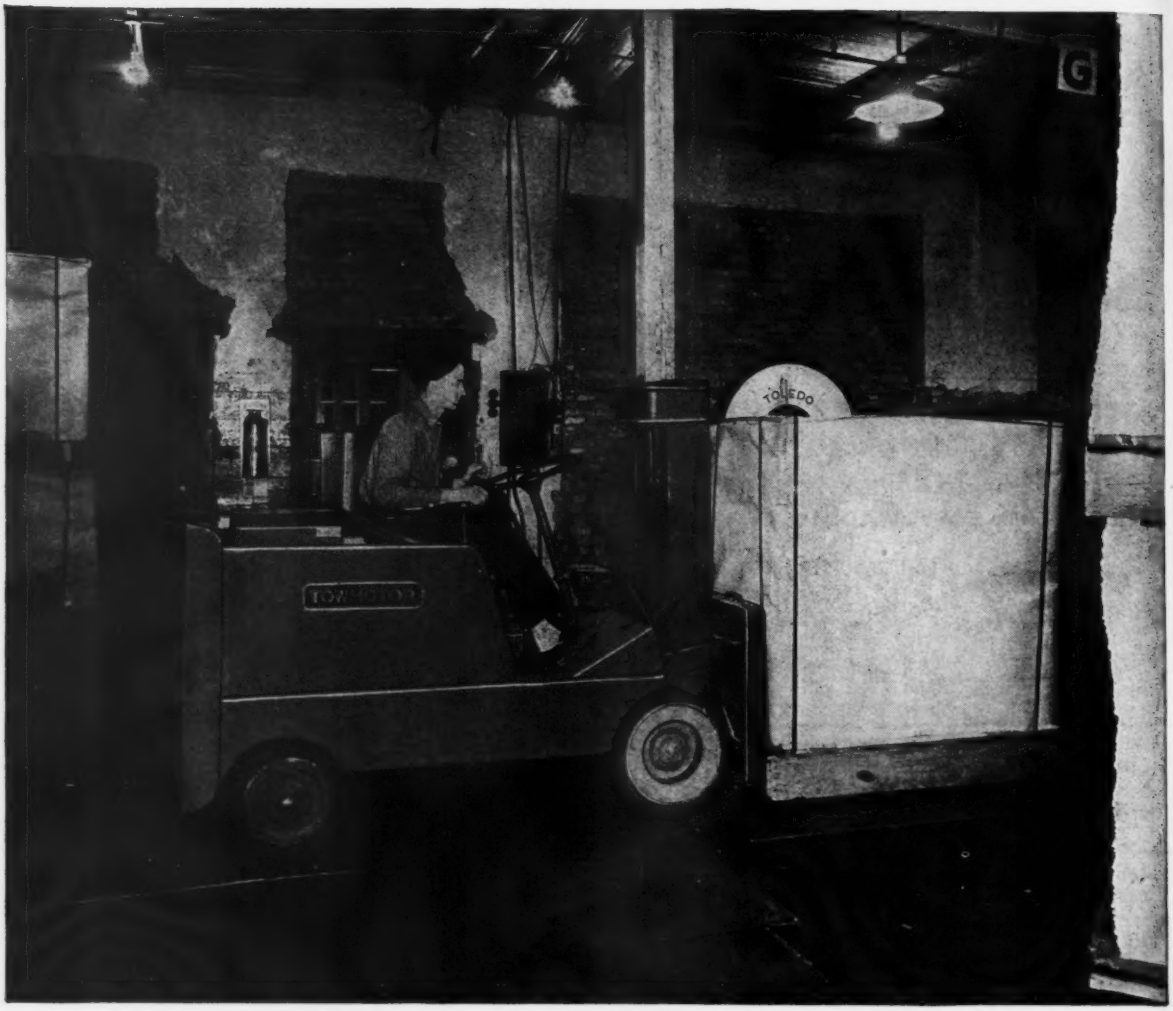
DENVER 4, Colorado . . Murray Sales Company, 18 Wazee Market
LOS ANGELES 15, California . W. T. Billard Co., 536 W. Washington Blvd.
PORTLAND 9, Oregon . . . . F. E. Bennett, 332 N. W. 6th Avenue
SALT LAKE CITY 1, Utah . . Riter Engineering Co., 314 Kearns Bldg.
SAN FRANCISCO 10, California . Burt-Kline Company, 2415 17th Street
SEATTLE 5, Washington . Conveyor Engineering Co., 6903 57th St., N. E.

There's a balanced Lo-Hed Electric Hoist up to 12 tons capacity for every purpose, adaptable for operation on any monorail system.

Copyright, 1945, American Engineering Co.

AMERICAN ENGINEERING COMPANY

2427 ARAMINGO AVENUE, PHILADELPHIA 25, PA.



MATERIALS—WHEN and WHERE YOU WANT THEM

The efficiency of modern production methods depends upon a smooth, steady flow of materials. Versatile Towmotor, moving materials when and where you want them, provides systematic control of the entire cycle of operation, from receiving to shipping. The Towmotor distributor near you, qualified through years of experience in dealing with handling problems, can show you how Towmotor, the modern handling system, will improve production and lower costs in your plant.

Irving G. King & Co.
821 Mateo Street
Los Angeles 21, California
Phone: TUcker 3176

Pacific Industrial Products Co.
801 Jefferson Street
Oakland 7, California
Phone: GLencourt 5921

Albert J. Lilygren
558 First Avenue, S.
Seattle 4, Washington
Phone: ELiot 5275

Concord Bldg.
Portland 4, Oregon
Phone: ATwater 9211

TOWMOTOR *THE ONE-MAN GANG*

...in a hurry for Steel?

Raise Caine!

WAREHOUSE STOCKS OF:

SHEET STEEL
HOT ROLLED,
COLD ROLLED,
HOT ROLLED
AND PICKLED,
GALVANIZED,
LONG TERNES,
VITREOUS
ENAMELING,
UNIFORM BLUE.

STRIP STEEL
HOT ROLLED,
COLD ROLLED
STRIP,
COLD ROLLED
FLAT WIRE.

MILD STEEL
BARS, BANDS,
AND PLATES

HOT ROLLED
STRUCTURAL
SHAPES

A CUT OR CARLOAD Order gets just the same service and prompt delivery at Caine Steel Co.

Fully equipped to cut and prepare steel to your requirements, Caine Steel has complete stocks of the items listed at the right.

Five service-plants located in five principal cities and two plants on the Pacific Coast make it advantageous to RAISE CAINE FOR STEEL

REMEMBER
THERE'S A NEW SOURCE OF STEEL IN THE WEST

CAINE STEEL CO. of CALIF.

LOS ANGELES 11
2451 E. 23rd St. • KI. 1211

OAKLAND 8
3110 Adeline St. • HU. 0900

CHICAGO ST. LOUIS MEMPHIS OAKLAND LOS ANGELES

MACHINE TOOLS

RECONVERT NOW!

WITH GOVERNMENT-OWNED INDUSTRIAL EQUIPMENT ... AVAILABLE THROUGH

RFC

TODAY— vast stocks of government-owned Machine Tools and Industrial Equipment are surplus as a result of cancellation of war contracts.

Machine Tools and Industrial Equipment will be disposed of by Reconstruction Finance Corporation. The supply is sufficient to meet all requirements of industry.

Submit your requirements now, in triplicate, to the nearest RFC Regional Office listed below. State your needs clearly, grouping various types of equipment.

In case your local RFC Regional Office cannot fill your specific needs, it will endeavor to locate the tools you need from other RFC Regional Offices.

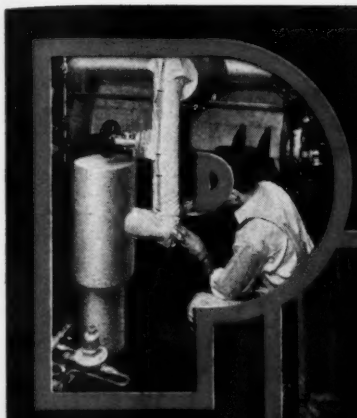
• • • •

RECONSTRUCTION FINANCE CORPORATION

A DISPOSAL AGENCY DESIGNATED BY THE SURPLUS PROPERTY BOARD

Agencies located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cleveland • Dallas • Denver Detroit • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville Minneapolis • Nashville • New Orleans • New York • Oklahoma City • Omaha • Philadelphia Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane

103



FOR ENGINEERED INSULATION

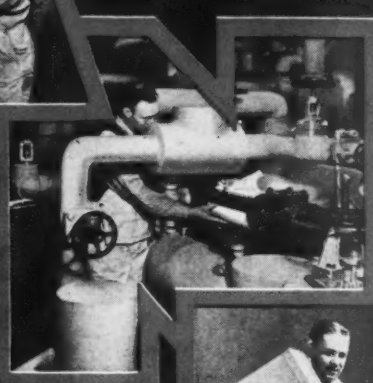
SHIPS

REFINERIES

POWER PLANTS

FACTORIES

BUILDINGS



★ We place at your service an army of 2,000 skilled applicators trained and employed by Plant Engineering Service Units.

★ We collaborate with engineers by furnishing specifications and details for properly applying our insulating materials at any temperature.

★ Factory-coordinated "Know-How." Constant interchange of experience and methods between our three Factories and each Plant Engineering Service Unit.

★ A Quarter-Century of Successful, Responsible Contracting.

PLANT REG. U.S. PAT. OFF.

COMPLETE RANGE OF SIZES and thicknesses in blocks and pipe coverings (up to and including 18 inch pipe size in sectional form. Larger sizes in segmental form).

PLANT RUBBER & ASBESTOS WORKS

GENERAL OFFICES: SAN FRANCISCO

SALES OFFICES in Los Angeles, Wilmington and Oakland, California.

PLANT ENGINEERING SERVICE UNITS Located in Principal Cities.

FACTORIES in Emeryville, San Francisco and Redwood City, California.

Manufacturers of Plant Insulating Materials and Mechanical Packings. Established 1898.

Army-Navy "E" Awarded to FACTORY No. 3 Emeryville, Calif.

Who's got the edge on getting finished FIRST?

That's easy. The man who has no loose sheets — no carbon fuss to deal with. The man whose forms are all set for writing, and who by a simple twist of the wrist will complete his transaction. Here's convenience that means efficiency — UARCO Register convenience.

UARCO has a complete line of registers — a register to suit every record-writing need from purchasing orders to bills of lading. Forms, enough for a full day's use — usually more — are loaded at one time. The firm writing base plus an ever-fresh roll of carbon assures clean, legible copies. Also, if desired, registers that automatically file duplicate copies of every record written can be had.

Check UARCO's story today. A UARCO representative will be glad to show you their complete line of Registers free of charge. Or write today.

For Instance

Here is one of UARCO's many Registers—the Featherweight. This register is suited for order writing in the field, for the taking of orders over the phone. It gives you all the register advantages you want in a small, compact case. For further details, write today.

KATHANODE BATTERIES

Cut Charging Costs in...

ELECTRIC TRUCK OPERATION

Charging station for industrial truck batteries in a large warehouse

Kathanode's high charging efficiency is due to its special negative plate. This has a negative active material of unusually high density. It is less inclined to permanent sulfation and therefore requires less current in the conversion from sponge lead to lead sulphate.

In battery-powered electric trucks this more efficient utilization of charged current means lower charging costs and better operation of your materials handling equipment.

Battery power is best for materials handling, and Kathanode is the best battery power. Write Dept. 811 for Catalog 108 on Gould Kathanode Glassklad Batteries for Industrial Truck and Tractor Service.

GOULD

PIONEER OF GLASSKLAD CONSTRUCTION

GOULD STORAGE BATTERY CORPORATION, Depew, N. Y.
Factories: Atlanta • Chicago • Dallas • Depew • Leavenworth • Los Angeles
North Bergen • Rock Island • St. Paul • Salina • Sioux City • Zanesville

for better WIRE *products*

USE THE WIRE THAT HAS PLENTY OF "KNOW HOW" BEHIND IT

IT'S NOT because they're glamorous but because they're so indispensably useful that we show these nuts, bolts, and screws to illustrate typical products made of steel wire.

Without these simple, taken-for-granted metal fasteners to hold things together, some of our most costly and ingenious devices, our most intricate machinery, our stateliest buildings might never have been built.

Wire for metal fasteners is only one of the many forms in which the mills of United States Steel have produced wire of superior quality for more than 160,000 different manufacturing uses.

Improved by war service

We've learned a lot about making wire better during these war years. Because we know how to turn it out faster and in greater quantities . . . to meet the most severe specifications, you'll find American Quality Wire better than ever before—to do a better job for you.

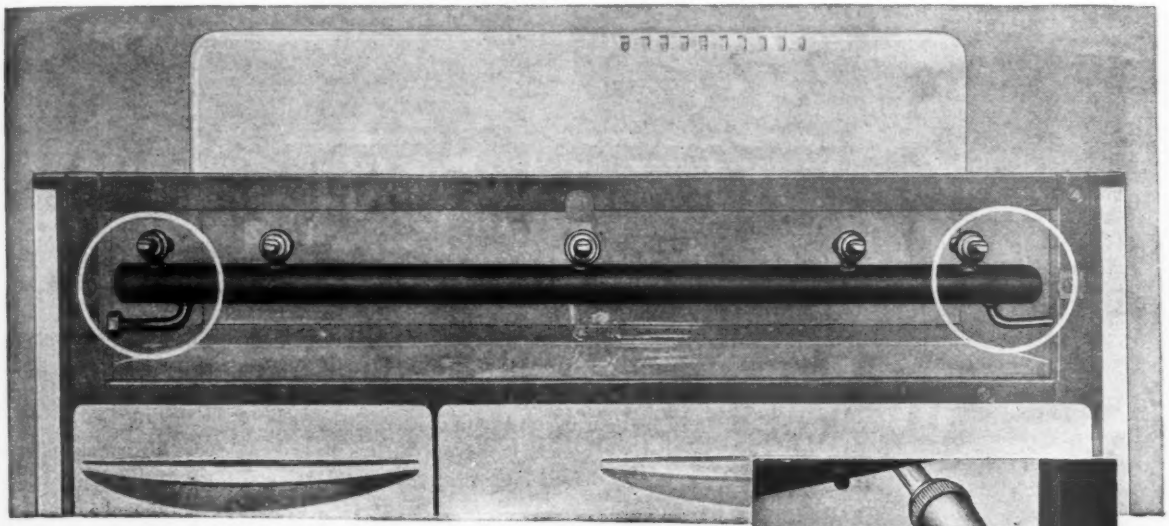
EVERY SUNDAY EVENING, United States Steel presents *The Theatre Guild on the Air.* American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

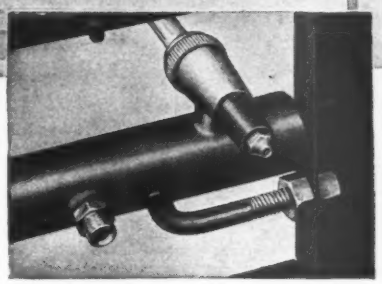
COLUMBIA STEEL COMPANY
San Francisco, Los Angeles, Portland, Seattle and Salt Lake City
AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York
United States Steel Export Company, New York

USS AMERICAN MANUFACTURERS WIRE UNITED STATES STEEL

UNITED STATES STEEL

How stud welding helped produce a better stove...*faster!*

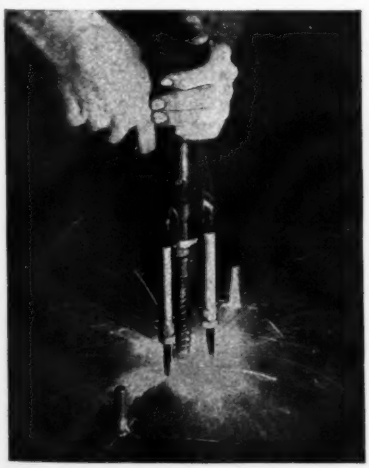




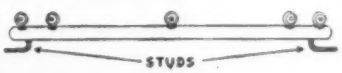
At right is a closeup of the complete assembly showing how stud supports the Feed Pipe.

This is the story of how a stove manufacturer used stud welding to save production time and cost — and obtain a better product

NELSON Stud Welding is a means of *automatically* end-welding studs. Flux-filled studs in all diameters from 3/16" to ¾" are welded in *less than one second.* The result is a stud completely fused to metal without distortion — equal in strength to studs secured by any other method.



Formerly cast iron was used for the Feed Pipe. Now a black-iron pipe is used because of the stud welding, resulting in faster production, and a better gas system with longer life for the pipe.



Straight studs were welded to the ¾" Dia. pipe and bent over after welding.

The studs are applied with the Nelson Stud Welding Gun, using a standard welding generator. The operator inserts the stud into the gun chuck, locates the pointed end in position and pulls the trigger. The stud is welded instantly to the metal. The ease and flexibility of the equipment permits an operator to weld 500 to 1000 studs per day. Precision production units of one or more guns are available.

There are many similar problems that can be answered by stud welding. Write today for Catalog and Price List.

NELSON SPECIALTY WELDING EQUIPMENT CORP.

Dept. H, 440 Peralta Ave., San Leandro, Calif.

NELSON STUD WELDING

Listen to the Human Adventure on the Mutual Network every Sunday evening, 9 to 9:30 P.M., Eastern Time.

The green light in metals... Revere has them NOW

Revere knows well how precious to the nation each of these post-war days can be, and how crippling to industry and employment could be a shortage of essential metals. That is why, since V-J Day, Revere has been in full production for peace.

Fortunately, Revere metals can serve the needs of creating as well as those of destroying, can make as fine bathroom fixtures as bomb fuses, as excellent radiators for automobiles as for half-tracks. No difficult reconversion problems have stifled the outpouring of Revere metals.

Revere copper, brass, bronze, aluminum, magnesium, steel, are ready *now*, are already busy in thousands of plants helping shorten the period of reconversion for industry and for the nation.

We are able and eager to do more. One inevitable result of Revere's war effort has been that not only our ability to produce, but our ability to give service, have been expanded many times. Revere research has probed further and deeper. Revere Technical Advisors are armed with greater knowledge and experience. New methods, metals and machines may save precious time or cut all-important cost for users of our metals.

In all these ways Revere is ready *now* to serve the manufacturing and building industries to help you prove *immediately* that America is even greater in peace than she proved to be in war. In the same way Revere is ready to serve home owners with its building products which are stocked by Revere Distributors in all parts of the country.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.

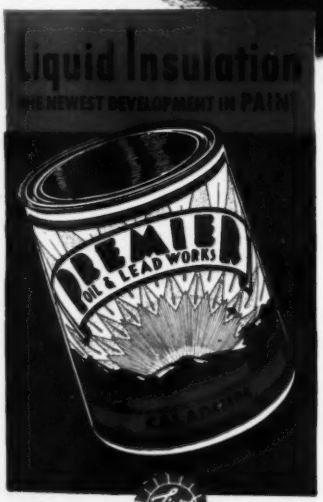
Sales Offices in principal cities, Distributors everywhere

Revere District Sales Offices are located in the following cities:

Atlanta, Ga.	Boston, Mass.	Buffalo, N. Y.
Cincinnati, O.	Cleveland, O.	Dallas, Texas
Dayton, O.	Grand Rapids, Mich.	Hartford, Conn.
Houston, Texas	Indianapolis, Ind.	Los Angeles, Calif.
Milwaukee, Wis.	Minneapolis, Minn.	New York, N. Y.
Philadelphia, Pa.	Pittsburgh, Pa.	Providence, R. I.
St. Louis, Mo.	San Francisco, Calif.	Seattle, Wash.

The Revere Office nearest you is at your service.

SUPER TOUGH FINISH...



First

PREMIER PAINTS

Caladium is especially designed to produce a bleed-proof decorative coating over all types of asphalt and bituminous surfaces. It may be used over asphalt coated corrugated iron, asphalt saturated roofing materials, and various kinds of asphalt impregnated building boards and papers. Caladium covers asphalt coated surfaces without bleeding, such as paved areas, roofs, or other bituminous or gilsonite coatings.

Over Wood—Caladium produces a lasting finish. Particularly recommended for use over redwood.

Over Metal—The remarkable sun-heat deflecting properties give Caladium definite advantages in painting all types of metal surfaces. Greatly reduces temperatures in corrugated iron buildings, storage tanks, refineries, truck and railroad car tanks, and metal structures.

Specify *Caladium* to be used over *all* types of surfaces to prevent bleeding or to deflect the heat rays of the sun. Caladium provides a flexible, super tough, decorative coating that assures greater weather resistance, longer life.

PREMIER OIL & LEAD WORKS
3950 MEDFORD ST., LOS ANGELES 33, CALIF.

Caladium

PERFECTION IN PAINTS

RICHFIELD TUL-KUT TRANSPARENT CUTTING OIL

PROLONGS TOOL LIFE
INSURES SMOOTHER FINISH

Richfield Tul-Kut Transparent Cutting Oil is a combination of highly treated mineral oils compounded with sulphurized lard oil.

Transparency is the result of purity of ingredients and method of manufacture. The absence of harsh chemicals gives Tul-Kut stability and long life and eliminates dangerous effects on machine operators.

Tul-Kut "B" Transparent is for lighter, faster cutting operations. Tul-Kut "C" Transparent is blended for heavier and slower machining. Any desired viscosity may be obtained by blending Tul-Kut with neutral oil. Call in Richfield engineering service for proper recommendations.

Check These Advantages . . .

- ***Long lasting. Can be used over and over again by filtering and addition of make-up oil.***
- ***Purity makes it harmless to normal skin, hands and lungs and resistant to heat and chemical breakdown.***
- ***Transparency gives better view of operation and facilitates inspections.***
- ***Tul-Kut is a quality cutting oil for longer tool life, low consumption, better finish on machined parts and safety to the operator.***

INDUSTRIAL LUBRICANTS FOR ALL PURPOSES

RICHFIELD

SAYS THE MAN IN THE HELMET—

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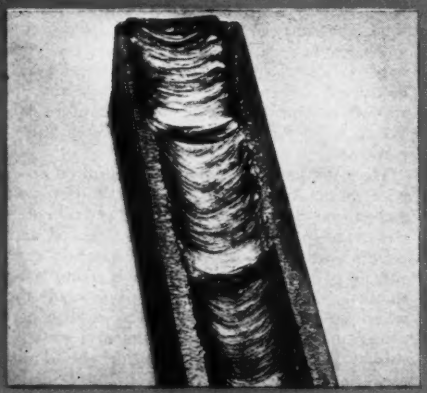
(AWS Classification E6020)

"I use it for conventional fillet, deep fillet, and deep groove welding. It's a honey for all three jobs.



"It takes plenty of juice and has a high burn-off rate and faster deposition, which makes it ideal for deep-fillet welding. The arc is steady and forceful and has a fine spraying action, with very low spatter loss.

"Passes are deeply convex at the root with good washup and no undercutting at the face. Penetration is medium with normal currents. It's excellent for all jobs where you need good appearance, high mechanical properties, and welds that will pass rigid X-Ray examination.

"Slag covers well and comes off easily. Airco No. 315 can be used with AC and with DC, straight or reverse polarity. You can use it for any job that calls for a 6020 or 6030 electrode."

This new electrode is a notable addition to the famous line of Airco electrodes. Whatever your welding need, there's a quality-proved Airco electrode for every requirement. Catalog No. 120 describes the complete line. Write for a free copy to your local Airco office, or to Dept. W.I. Address Air Reduction, General Offices: 60 East 42d St., New York 17, N.Y. In Texas, Magnolia Airco Gas Products Company, General Offices: Houston 1, Texas.

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Paper starts with big logs that must first be debarked and whittled down to three or four inch chips. "Air at Work" then takes over to carry bark and sawdust to furnace fires, and convey the clean chips to digesters. AIR is on guard here—to drive away noxious fumes—and again while the mixture is screened, washed, bleached and "beaten" into a soft, fluid slurry. This is dried (another job for "Air at Work")—or piped direct to the "Wet End" of the paper machine.

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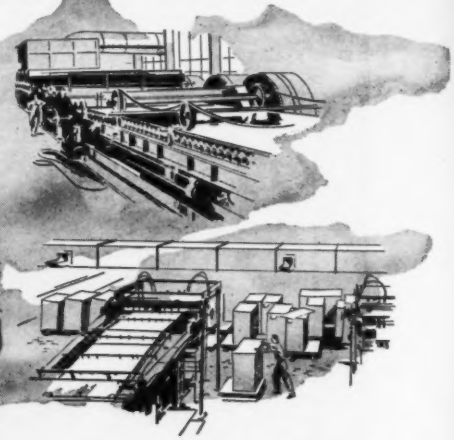

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Why more offices and factories reduce noise with Acousti-Celotex than any other product

And why it will pay your company to sound condition this *proved* way

THE OUTSTANDING preference for Acousti-Celotex* didn't just happen. It is the result of more than twenty years of *proved* performance—the *longest* record of sound conditioning efficiency in the world!

And that performance didn't just happen, either! It is due to a rigid policy of unfaltering *quality control* in the manufacture of Acousti-Celotex—plus unerring *installation control* by selected distributors.

Little wonder, then, that leading companies everywhere have remedied noise problems by sound conditioning with Acousti-Celotex! This famous perforated fibre tile—used in more offices and factories than any other sound conditioning product in the world—offers you *all four* of these important advantages:

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So...*before* you sound condition *your* office or plant, be sure you will get *genuine* Acousti-Celotex. A call or note to your Acousti-Celotex Distributor will bring a trained expert to your desk.

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* *Perforated Fibre Tile* SINCE 1923

Spotlight on the NEWS

WESTERN INDUSTRY
FOR NOVEMBER, 1945

VOLUME X NUMBER 11

Long Range Viewpoint

Temporarily the economic situation in the West is highly favorable, and indications are that the future will continue so, but there are various long range factors that must be weighed carefully to avoid over-optimism. The leading article in this issue (pages 43-46) points out that reconversion actually has not taken place yet in the West, and the hurdles of wage adjustment and decrease in government spending must be surmounted before the transition out of a war economy is completed.

Don't Sell Aluminum Short

This was the advice we gave in our August issue regarding the war-built aluminum plants in the West. There is plenty of interest in their future, expressed not only by Alcoa and Reynolds, but also by others. The Western States Council light metals committee heard a brand new possible purchaser at their October meeting in Salt Lake City. Olin has come out of its shell a bit and RFC says a number of others have expressed interest. Poor old Alcoa meanwhile is getting pushed around by the government and Reynolds is the fair-haired child in the situation, at least right now (page 52).

DPC Plants Beginning to Sell

Reconstruction Finance Corporation is beginning to sell a few of the DPC war plants in the West. One brought its face value, others were sold very cheap (pages 56-57) and RFC evidently believes it can collect a full pound of flesh from Kaiser for Fontana. Meanwhile, Geneva is closing down in a cloud of gloom. But Basic Magnesium is taking on a new lease of life in a modest way as a chemical center, and negotiations for sale or lease of many more plants are in progress. As we have said before, these plants are not industrial graveyards, but new opportunities.

Incentive Pay and Profits

Keeping wages up while OPA ceilings still exist is a toughie for management in most instances. A contributor to this issue (pages 58-59), outlines how an incentive pay plan can be set up with the result that profits can be maintained or even increased without violating OPA ceilings.

Blast Cleaning Changes

The wartime adaptation of agricultural products such as wheat and clover seed for use as abrasives in blast cleaning is by no means the most startling development in the blast cleaning section of the maintenance world. Invention of the Vacu-Blaster (page 62) by a San Francisco firm will not only result in tremendous economies in maintenance, but it may well presage a series of continued developments of new techniques.

More Chemical Industries

Development of chemical industries in the Pacific Northwest are vital to the economy not only of that section of the West but of all the eleven western states, according to Ivan Bloch, writer of the article (page 57), who sees the Pacific Northwest as the center of a tremendous electrochemical and electro-metallurgical activity.

Aluminum's Future

Admitting by inference that aluminum enabled the allies to gain the mastery of the air in the recent war, E. J. Appel of the Reynolds Metals Company (pages 53-55), sees a future for the metal in commerce and industry that is as bright and shining as any streamlined job that ever penetrated into the "bright blue yonder."

Another Plastic Advance

The marriage of plaster of Paris with a resin that is one of the latest developments in the plastics field promises to be a great aid in the art of casting. Use of the new substance (pages 47-49) extends from the aircraft industry to the formation of foundry patterns and the making of statuettes. Because of the low cost of producing the finished product and the durability of the material it is highly likely that manufacturers in the ceramics field will find its use distinctly advantageous.

Rubber Replaces Steel

Another bit of evidence that we live in an age of wonders lies in the use of synthetic rubber forming pads in the place of steel for the manufacture of airplane parts. Under high pressure, rubber, thanks to this new technique, is able to replace one of the two steel dies needed in the formation of light metal castings (pages 90-91). Thus production is greatly speeded with resultant economies in cost.

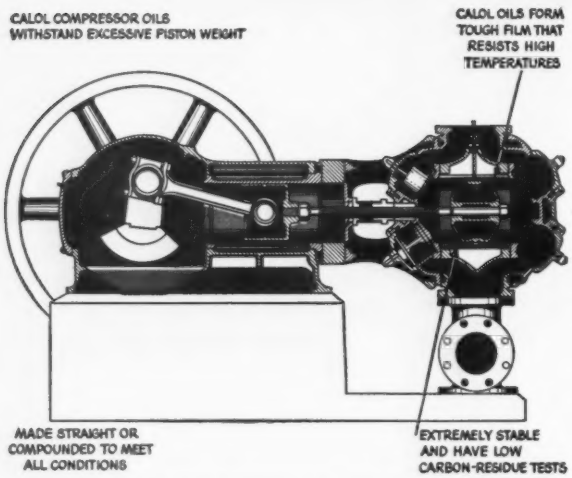
Labor, from the Capital

Labor unrest, the future of small business, and the Labor-Management Conference that is to get under way in the next few days, all are seen by Arnold Kruckman, our Washington editor, as matters of prime importance during the coming weeks. Especially indicative of the trend of the times, in his opinion, is the rising interest among salaried workers in their unionization (pages 64-67). Those who feel badly about his report on John L. Lewis are urged to remember the old adage about giving the Devil his due. Time has proved it wise.

STANDARD ENGINEERS NOTEBOOK

CALOL

RPM


CALOL COMPRESSOR OILS WITHSTAND EXCESSIVE PISTON WEIGHT
CALOL OILS FORM TOUGH FILM THAT RESISTS HIGH TEMPERATURES
MADE STRAIGHT OR COMPOUNDED TO MEET ALL CONDITIONS
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Special oils up air compressor efficiency

Many operators have increased air delivery from compressors by lubricating cylinders with specially-made Calol Compressor Oils.

To meet both dry and moist operating conditions, in all type compressors there are two grades. Both withstand high pressures and temperatures.

Calol Compressor Oil—19 is a straight mineral oil. Pale in color, it is very stable and correctly lubricates under pressures up to 150 pounds per square inch.

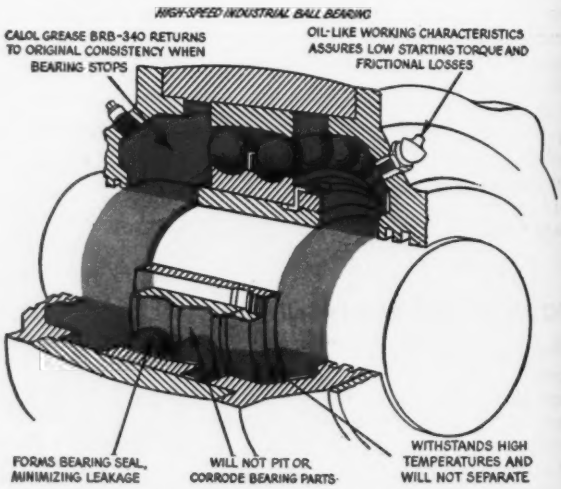
Calol Compressor Oil—19X is compounded and completely resists the washing action of moist air on the cylinders of machines operating in humid surroundings. It is particularly adaptable to large horizontal compressors, where piston weight is a factor, and to compressors on air-injection Diesel engines.

New Calol grease softens and resets

Where anti-friction bearings operate in severe conditions of temperature and speed, newly developed Calol Grease BRB-340 allows easy starting and reduces running friction to a minimum. At high shear rates, its apparent viscosity approaches that of its oil component. However, undue leakage from bearings is prevented by the peculiar ability of Calol Grease BRB-340 to reset, which causes the excess grease, swept aside by balls and rollers, to form a partial seal.

Calol Grease BRB-340 is soft, smooth and has a fine fibrous texture. It is milled by a special process that eliminates bleeding although it contains an unusual amount of oil stock.

When undergoing severe tests, Calol Grease BRB-340 showed no separation in a bearing operating 10,000 RPM at 200° F. for 528 hours. At the end of the test the bearing was in good condition.


HIGH-SPEED INDUSTRIAL BALL BEARING
CALOL GREASE BRB-340 RETURNS TO ORIGINAL CONSISTENCY WHEN BEARING STOPS
OIL-LIKE WORKING CHARACTERISTICS ASSURES LOW STARTING TORQUE AND FRICTIONAL LOSSES
FORMS BEARING SEAL, MINIMIZING LEAKAGE
WILL NOT PIT OR CORRODE BEARING PARTS
WITHSTANDS HIGH TEMPERATURES AND WILL NOT SEPARATE

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FOR EVERY JOB A STANDARD OF CALIFORNIA TEST-PROVED PRODUCT

LONG RANGE FACTORS ANALYZED IN WESTERN RECONVERSION . . .

Employment Situation in the Transition from Military to Civilian Economy Affected by Government Expenditures, Wage Adjustments

Transcript of a recent speech by Dr. William M. Hoad, Research Specialist, Federal Reserve Bank of San Francisco.

THE West, to an even greater extent than the rest of the country, has experienced a business boom as a result of our part in the war effort. The postwar problem is to make the transition from a military to a civilian economy without having the boom collapse.

In evaluating the problem, it now becomes possible to compare the actual developments since the ending of hostilities with the forecasts made by industrialists a year before the surrender of Germany, and also to weigh some of the factors that will govern the future.

Eight hundred and fifty-seven leading manufacturers on the West Coast reported in the joint Federal Reserve Bank-C.E.D. survey in 1944 (published in the May, 1945, issue of *Western Industry*) that they expected their own postwar employment to be 40 per cent higher than prewar, but only half the war-time peak of 1943. The shrinkage was ascribed to an expected 90 per cent reduction in shipbuilding and aircraft, amounting to 775,-

• With ships jamming the ways and outfitting docks of Yard 1 of the Permanente Metals Corporation in Richmond, California, the population of the city quintupled itself to above the 100,000 mark, thus forming one of the west's greatest reconversion problems.

000 employees, 650,000 during a transitional period of ship repair, and an additional 125,000 later on. There was no hope that other manufacturers could take up all the slack.

The problem seemed monumental, because in the peak year our West Coast aircraft plants and shipyards alone employed over one and a half times as many as all manufacturing industry in the area had before the war. Western war industries were also largely new plants, with no pre-war products and markets, whereas the great war producers in other sections had in large measure something to convert back to.

To a certain extent we also had an imported job problem, because between 1940 and 1943 the West Coast civilian population increased 13 per cent as against a 3 per cent decrease for the United States as a whole, despite a heavier than average military withdrawal rate due to a larger than average proportion of white males of military age in our population. This West Coast growth was possible because of a net in-migration of about 1,750,000 persons in these three years. The only way in which the job problem could be exported would be to have a depression here simultaneously with a boom elsewhere, in which case we would lose population.

In another respect the Coast differs from the rest of the country, namely in the timing of reconversion. The Japanese surrender offer caught us with record amounts of goods and numbers of men flowing into and through our ports and port facilities. Activities necessary to wind up the various commitments in the Pacific theatre will take a long time, and they will center on the West Coast.

In some ways this is an advantage, in others, a disadvantage. Soldiers and sailors and their wives and families will continue to buy in our stores longer; government office personnel, military and otherwise, will be needed to account for men and goods during a relatively long demobilization process. Meantime businesses servicing these men and goods will continue to enjoy brisk demand.

Warehouses Crowded

On the other side of the ledger, we may experience greater difficulty in freeing our warehouses and industrial space, and our transportation, housing, and other facilities, for civilian use.

The most striking immediate development is that employment in privately operated shipyards and aircraft plants already has contracted by about 500,000 persons and we have hardly felt it at all. Applications for unemployment compensation went up a little, but are still far from alarming in number; there are more job openings in some areas than registered unemployed; housing continues to be scarce —scarcer than in 1943 in some places; and business prosperity continues unabated. Department store sales in California hit a new high in July, and in the Pacific Northwest reached levels equaled or exceeded in only three other months, after allowing for seasonal influences. August sales, while below the July record, were about twice as high as before the war, in 1939 and 1940.

What has happened to the displaced workers is not at all clear. Government shipyards picked up between 30 and 35 thousand additional employees, but let 13,000 go (by Sept. 15) so to some extent the reduction in private shipbuilding employment was merely a shift. Manufacturing employment other than that in shipyards and aircraft plants may have absorbed 25,000. Trades and services have expanded by perhaps 200,000 jobs, including self employment. This may be an understatement, since current measures of employment in trades and services, including domestic service and similar occupations, are not accurate and probably tend to understate rapid changes in either direction.

Displaced War Workers

Some of the displaced war workers are known to have moved out—but apparently other people have come in to fill the houses and to maintain retail purchasing power. Some housewives have withdrawn from the labor market and some workers apparently are voluntarily not employed, while they rest up and enjoy a period of vacation or pleasant loafing.

Does this mean, as is asserted in newspaper articles, that the Coast already has reconverted? On the surface, it is an impressive performance for an economic area the size of this one to experience a loss of half a million high paying manufacturing jobs without showing signs of even temporary distress. Examination of such facts as are available suggests the opposite—that we have experienced no great reconversion pains simply because we have not yet reconverted.

The problem does not lie in merely the physical shifting from one kind of production to another. For example, there is a population aspect of reconversion. So far, employment opportunities appear to be adequate for our larger population—except for members of certain minority races. The Japanese problem, which is distinctly one of *re*-conversion, already has developed stresses without developing a solution.

Negro Population

Everything indicates that we shall have to adjust to living with a greatly increased negro population, without the war jobs that made it profitable for us to encourage them to come here in the first place. Have property owners and other real estate interests, for example, converted to the enlarged negro citizenship in their various communities?

The fiscal aspect of reconversion, is chiefly what is meant in the previous statement that we have not even started yet. As this country converted to war production the Government became the purchaser of over half of the gross national product.

As a result, even though the Government took a large share of the product, the quantity of goods available for civilian consumption remained about the same, and the amount of purchasing power in the hands of civilians went up. The chief problems of conversion arose out of the need to augment our productive equipment and to change it around so as to produce those things that military procurement officers wanted.

In reversing the conversion process, the relative difficulties of the physical and the purchasing power aspects of the problem also may well be reversed. That is, physical reconversion of plants to produce civilian goods may be much easier to bring about than the transfer of buying power from the Government to civilian consumers. The trouble arises from the necessity for transferring the flow of purchasing power without losing too much of it.

Since the nation now has a much greater productive capacity than was utilized before the war, return to the pre-war level of purchasing power would entail operation of our plants at half speed. At present, consumers appear to have more than enough purchasing power to take up all available goods—indeed the excess of consumer purchasing power over the flow of goods was the reason for authorizing, and is the reason for retaining, price controls. The question is, will consumers continue to receive ample purchasing power when government expenditures drop. Experience to date provides no guidance, because government expenditures have not yet dropped.

"In the fiscal year ended June 30, 1945, the Federal Government spent 100 billion dollars, or an average of 8½ billion dollars a month. The budget for fiscal 1946, readjusted downward after the surrender of Japan, contemplates expenditures of over 67 billion dollars. This is a substantial, but by no means the ultimate, decrease. Furthermore, an expenditure level as low as 66 billion dollars can be achieved only by spending less in the later months of the fiscal year than in the earlier months. In point of fact, we have not yet experienced any sharp reduction in government spending below the average monthly rate of fiscal 1945. In July, August and September the Government paid out over 7¼ billion dollars a month compared with the 1945 rate of 8½ billion. It can hardly be maintained, accordingly, that the reconversion period already has been successfully negotiated. The boom remains primarily a war boom."

In one sense the West should have less difficulty than the rest of the country in making the transition, since government expenditures in this area are likely to continue at higher levels for a longer time. The other side of the matter is that government expenditures already have been concentrated heavily in the area, with the consequence that we may have developed a greater dependence on their continuation.

For the country as a whole, the Treasury can not pay out more funds than it obtains from current taxes or from sales of securities, except by reducing its cash balance. For the Twelfth Federal Reserve District, consisting of the seven western states except five Arizona counties, the Treasury has regularly disbursed more than it received in taxes or from the sale of securities. To date in 1945 the Treasury has paid out some 90 million dollars a week more than it has drawn from the District. This rate of excess expenditures has been sustained since the surrender of Japan.

So far, apparently, federal spending has changed in direction, rather than in amount. Less now goes to aircraft plant and shipyard workers, but we do not actually know who is getting more. It seems likely that allotment checks to wives and families of servicemen have increased pretty steadily as more of them moved to the Coast to be on hand for demobilization. Similarly, the military offices responsible for moving troops and supplies probably have added substantially to their personnel in West Coast ports and depots. Contract termination payments, and discharge pay checks to soldiers and sailors, are other possibilities.

• Above is shown the flight deck of the world's largest land based plane, the XC-99 troop transport, constructed at Consolidated Vultee's San Diego plant. Powered with six pusher type engines, the huge craft will carry either several hundred troops or a pay load of well over 100,000 pounds. With such capacity for carrying cargo swiftly, it is evident that this military plane can be of important peacetime use. The job of converting to post-war production the plant that produced it is one of the West's many reconversion tasks.

Labor Difficulties

To judge by the increasing number of strikes and strike threats, the labor aspect of reconversion likewise has not yet been successfully completed. Indications are that it is just getting well under way. Under the circumstances, labor dissatisfaction (with prospective peace-time reductions in earnings) backed up by strikes, is as normal a part of the reconversion process as business dissatisfaction (with OPA civilian goods pricing), backed up by radio commentators, and by newspaper columnists and editorial writers. Another symptom of labor reconversion is continued shortages of labor with particular skills.

The great controversy, however, centers around proposals for increases in basic hourly wage rates to compensate for loss of overtime and redistribution of jobs away from high wage industries. Manufacturing pays more than most other industries, certainly more than the trades and services, and plants making war goods pay more than the average for all manufacturing. Jobs are being lost from the top of the wage scale—500,000 on the West Coast so far—and are being replaced at or near the bottom of the non-agricultural scale, in trade and service—possibly to the extent of 200,000 on the coast to date.

The California State Reconstruction and Reemployment Commission, in analyzing the 130 per cent increase in wage and salary income of the state between 1940 and 1943, estimated that the number of workers employed went up 33 per cent; the number of hours of work paid for per week went up 21 per cent (this includes overtime as time and a half); basic hourly wage rates went up 22 per cent; and that an additional increase of 18 per cent resulted from a shift to higher paid jobs (including both upgrading and the higher proportion of well-paid factory jobs).

If workers are faced with a return to pre-war hours and to the pre-war pattern of occupations, their earnings, even with no decrease in straight time hourly wage rates, would fall by 30 per cent, on the basis of the 1943 estimates of the Commission. This is the percentage increase in straight time hourly rates that labor spokesmen commonly seek.

Living Costs Rise

Let us look at it from another angle. The cost of living index of the Bureau of Labor Statistics has gone up about 30 per cent since the war. For San Francisco the increase to March 1945 from the 1939-41 average amounted to 30.6 per cent. Average weekly earnings of factory workers have risen more than this—for California the rise is nearly 80 per cent over the same period. Payroll deductions have increased as well, however.

Allowing for a 10 per cent war bond purchase, and for the income tax that would be paid by a married man with two children, take home pay has gone up from $31.00 a week to $46.00 a week, or 53 per cent. This is more than the 31 per cent increase in the BLS index, the comparison that is commonly made. The Heller Committee budget for a working class family of husband, wife and two children in San Francisco, after restoring to it a number of emergency curtailments in spending that could not be continued without permanently impairing the standard of living, increased by 53 per cent from the 1939-41 average to March 1945, the same amount as the increase in take-home pay.

This suggests that the apparent affluence of working people comes in part from inability to continue peace-time spending patterns, rather than from a greater amount of spendable income in relation to the prices of things that were formerly consumed. That is, additional expenditures for food, jewelry, rent, some forms of recreation, and so forth, may reflect inability to spend as much as usual on automobiles, refrigerators, radios, washing machines, and the like. The war bond purchases, however, are additional, since the Heller Committee budget as adjusted provides for whatever savings were customary before the war.

(Continued on Page 46)

RECONVERSION *(Cont'd from Page 45)*

Reconversion Pricing

The labor and the purchasing power aspects of reconversion become about the same thing at this point. Reconversion pricing, another aspect of the problem, also has some pretty obvious relevance. If wages rise, how can prices be held down?

One group would answer, "By reducing profits per unit and recouping through handling more units." Their opponents urge that attractive profits per unit at all levels of production are necessary to stimulate rapid reconversion and a high rate of postwar production. This opposing group relies on postponed consumer demand in conjunction with large amounts of liquid funds to overcome the adverse effects of reduced take-home pay. Policies and developments to date appear to be based on acceptance of the latter viewpoint.

If this view prevails, a Brookings Institute study indicates that we can anticipate a postwar national income, in dollar terms, of around 120 billion dollars assuming favorable conditions. The study concludes that such a level of income could provide employment to a substantially larger number than before the war, but to a somewhat lower number than the estimated postwar labor force.

Price Reduction

This implies a reduction of prices from the war levels, (when national income in dollar terms was 150 billion dollars) or a reduction in output, or both. It does not necessarily imply a fall in consumption, since more consumers' goods could be produced even though total production falls.

The State Reconstruction and Reemployment Commission has translated the 120 billion dollar national income into state figures for California. The Commission finds that, under the most favorable conditions, California could expect net spendable postwar income of $977 per capita compared with $790 in 1940 and $1,305 in 1943. Reducing these amounts to dollars of the same buying power as in 1940, the figures are 1940: $790 as before; and $782 after the war.

"The most pressing question, however, is not what the West's share of a 120 billion dollar national income might be, but whether or not we can have a 120 billion dollar national income. Can take-home pay go down, and can prices fall (when and if the volume of production rises enough to generate price competition) without setting in motion the vicious downward spiral of the deflationary phase of a cycle?

"Another way of putting it is, how do we know that, if national income starts falling from the 150 billion dollar level, it will stop when it reaches 120 billion dollars? Why shouldn't it continue to go down to 100, 80, 60 billion dollars? We have never succeeded in stopping it in the past."

Although per capita purchasing power, according to the Commission's estimates, would be lower than in 1940, *total* purchasing power would be greater because there will be more persons—the estimates are 6 billion 840 million dollars after the war compared with 5½ billion in 1940. In terms of actual dollars (rather than dollars of the same value as in 1940), the comparison is 8½ billion post-war as against 5½ billion in 1940.

We do not know, unless the answer lies in the existence of accumulated liquid funds. At the end of 1944 these amounted to about 20 billion dollars in the 12th District, of which 70 per cent had been accumulated during the war. They do not represent savings entirely; some of them arose out of deferred maintenance and postponed replacement. Individuals, including farmers and other unincorporated businessmen, as well as wage earners and others, held 14 of the 20 billion dollar total.

If one starts off by assuming all the answers, which is what is done by the little weasel phrase "assuming favorable conditions," a blueprint for full employment, or, to weasel again, a satisfactory level of employment, with a high standard of living and an adequate flow of all income shares, including profits, can be constructed at almost any dollar volume of national income.

Merely stabilizing dollar volume of national income at 150 billion dollars rather than at 120 billion or some other figure does not get around the problem. It would be possible to have a national income of 150 billion dollars a year or even more, with high prices *and* unemployment.

Even if we should grant, for the sake of argument, that it is equally possible to attain a satisfactory level of employment at various dollar levels of national income, there are other considerations that might make us prefer a high dollar level to a low one, or vice versa. While we can think of prices of currently produced goods adjusting to purchasing power, there are some payments that do not adjust because they are fixed by contract.

Postwar Public Debt

For example, the public debt will be 300 billion dollars whether national income is 150 billion or 50 billion. The debt service will require much higher tax rates on a low than on a high national income. Most of it, furthermore, was contracted during the war, when dollars were cheap.

Some contractual obligations, on the other hand, were entered into at a time when dollars were worth *more* than they are at present—part of the outstanding insurance policies, for example. The proportion of the total national income received respectively by holders of contractual obligations and persons who do not hold such obligations depends on the dollar level of national income. Also the relative burdensomeness of debt at different levels of income may itself influence both our economic and our political stability.

There are many questions to which, perhaps, only the future can provide an answer. Our day to day actions, however, may assume particular answers without our being fully aware of it. Here are a few such questions:

Does the level at which national income is stabilized have anything to do with the job problem? On the one hand, we have never maintained prosperity and jobs on falling income and falling prices—the profit system apparently works better on the rise. On the other hand, we have never had as many people wanting as many things and with as much money to pay for them—if we simply let go, allow things to adjust or fail to adjust on their own, who can say that the net result will not be good.

Overtime Loss

It might be noted in passing that, if it does make a difference whether or not industrial wages should be increased to compensate for loss of overtime and shift in occupations (which is a fundamental doctrine of the "don't let income fall" school), the problem is more acute in the West than elsewhere. The reason is that a larger than average part of our industrial labor force has been engaged in the highest paid war industries, with the biggest overtime checks.

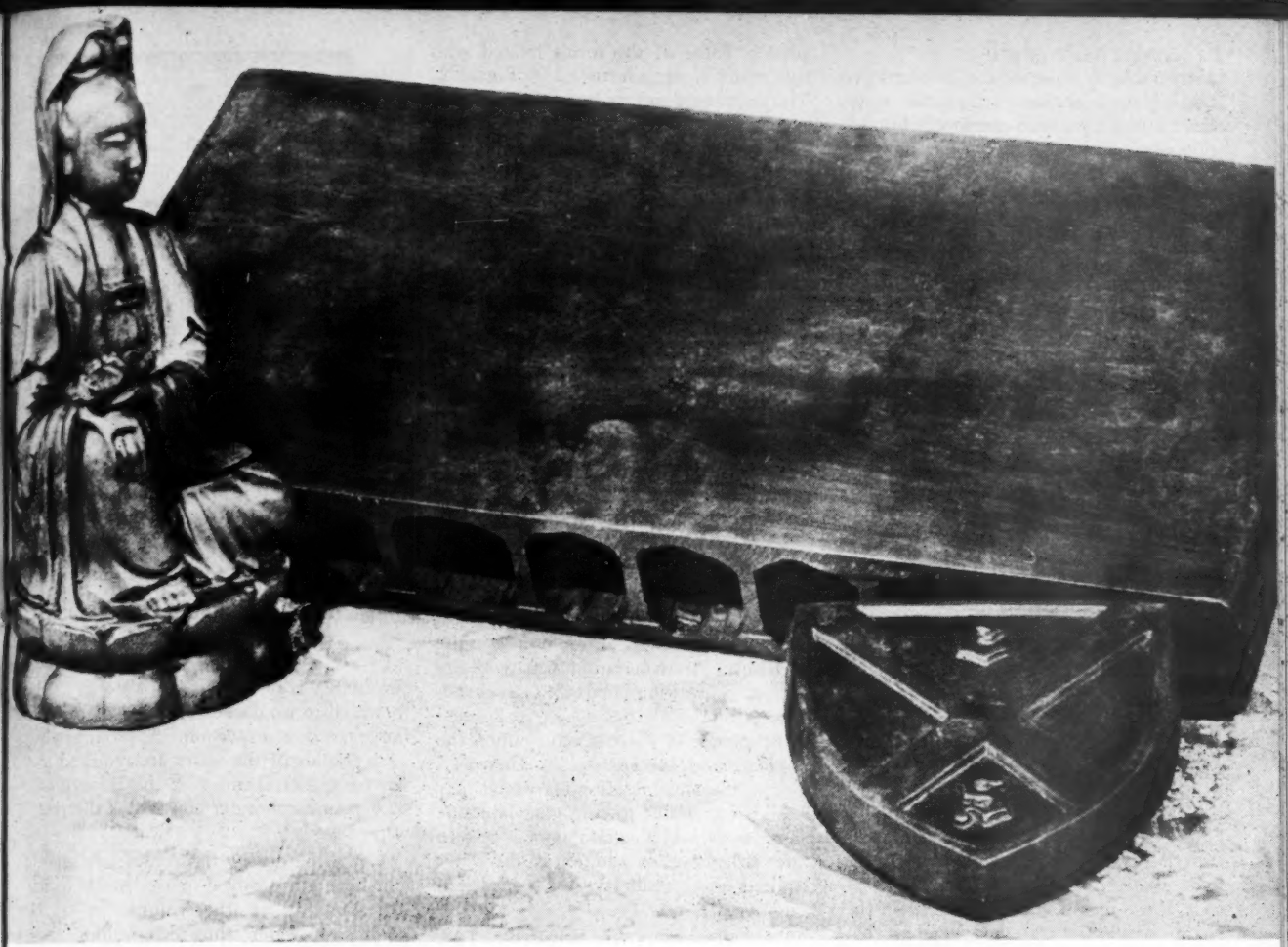
Another question is, regardless of whether or not it is *desirable* to maintain national income at 150, or 120, or any other number of billion dollars a year, can we do it? If so, how? Is the approach through basic wage rates the only one? Is it even a good one?

Not to Plan Is to Plan

We do not mean merely to stir up trouble between the pro-planners and the anti-planners, although that is inherent in the question. In the broader sense, a decision not to plan, but to leave everything alone, in the conviction, faith, or hope, as the case may be, that it will turn out for the best, *is* planning.

Last of all, is it possible, given our economic and political institutions, to stabilize a boom at *any* level of national income, whether arrived at by design, by the automatic working out of such economic forces as are allowed to work themselves out, by the interplay of political pressure groups, or by accident?

We hope it is, because that is about what our Western job problem calls for. A period of temporary prosperity while wartime savings are transferred from the hands of consumers to merchants, manufacturers, and so forth, without being fully paid out again to maintain the flow of consumer purchases, is no solution.



• Statuettes, foundry patterns, even mock-ups for plane parts, come from the union of plaster of Paris and new plastic materials.

PLASTICS—The Ceramics Field Invaded

By JOHN DELMONTE

IMPREGNATION OF plaster of Paris with plastics materials represents a process which will make appreciable inroads of plastics into the ceramics field.

These inroads do not imply the replacement of ceramics with certain plastics, but rather suggest new and judicious combinations of plastics with inorganic materials. The net result means an improved plaster of Paris product which has acquired the durability of the plastic, without sacrificing its low price advantage.

To realize the potential volume accruing as a consequence of this wedding, one has only to examine the innumerable applications of plaster of Paris in the decorative and industrial fields. From attractive statuaries and patterns for the foundry, to large mock-ups for aircraft wing or fuselage sections, plaster of Paris has been accepted as a highly useful material.

It has a number of limitations, as will be brought out in this paper, but these limitations are properties which plastics can and will contribute to in an effective manner.

One has only to work with plaster of Paris to recognize the many advantages it possesses from a fabrication point of view. A 100-pound package of material, costing a total of $1.00, has a price advantage which present plastics cannot begin to compete with.

When combined with approximately 60 pounds of water, the plaster will go a long way towards the preparation and casting of many useful objects. No baking or cure periods are required, and generally about 60 minutes after pouring (it sets in 20 to 30 minutes) it may be worked, carved or fabricated to various designs, if the mold has not already accomplished this.

The finest details may, of course, be picked up from the mold, though if it is desired to work with the freshly poured "green" plaster, it may be cut easily with special tools or with the aid of templates to reproduce accurate contours. Considerable quantities of the materials are employed for patterns and mock-ups.

Unlike cast plastic materials, these plaster forms have an important property advantage. There is no after or service shrinkage and upon setting, after a pour is made, the shrinkage is negligible. This is a property which has long been sought among cast liquid resins, and as yet it has not been achieved. Its disadvantages are that from the standpoint of physical properties, the materials are weak, much lower in strength than the usual organic plastics materials. Furthermore, they have the disadvantage of poor chemical resistance. Immersion in water, for example, leads to their early deterioration.

They cannot be operated at temperatures above 120-130 deg. F. indefinitely as they will lose water of crystallization and grow progressively weaker. Of course, short time exposures to high temperatures do not prove detrimental, particularly if the mass does not heat too rapidly.

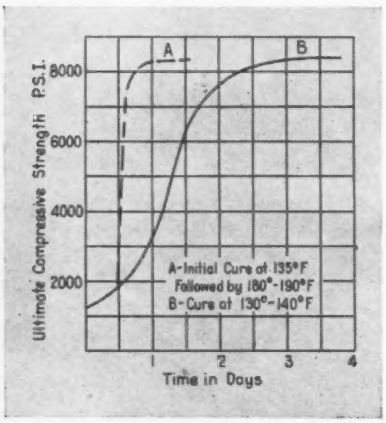
Through processes developed by the writer these major disadvantages have been overcome by impregnation of plaster forms with synthetic resins. Impregnated plaster forms have properties which are

(Continued on Page 48)

(Continued from Page 47)

comparable to those of cast plastics, permitting consideration of their use where cast plastics have been employed. In addition, impregnated plaster forms have advantages of economy in the use of a low cost base; the ease of pouring, setting, and working with plaster; and the negligible shrinkage of these materials even after impregnation and curing of the resin impregnant.

There is no reason why every fabricator of plaster forms or articles should not



become plastics conscious, as they now have available from the plastics industry, materials which will convert their articles to durable and permanent structures. Likewise, those manufacturers engaged in the casting of plastics materials will find that plaster of Paris impregnated forms will bear recognition from the viewpoint of economy and stability of dimensions.

Impregnated plaster forms are not suggested as panacea for all casting problems, but they show promise of fulfilling certain applications more efficiently and effectively than cast resins hitherto employed.

Origin of Plaster of Paris

Plaster of Paris is a specially prepared form of gypsum, sold commercially as a finely divided white powder and available in various grades such as general purpose casting plaster; a higher strength "Hydrocal" plaster characterized by negligible expansion on setting; and a high strength casting plaster known as "Hydrostone."

Most efforts of the writer to precombine plastics with plaster of Paris were confronted with some loss of the ease and technique of handling plaster, and on investigating the impregnation of finished plaster castings with various resins it was found that they gained the advantages of the added plastic and still retained the cost, ease of workability, and dimensional stability of the plaster forms. After investigating many types of commercial resins, a procedure was established using a low viscosity furfural resin, developed exclusively for the purpose of impregnating plaster. Some of the forms treated with this material are illustrated in Figure 1. The techniques and methods of application are examined hereafter.

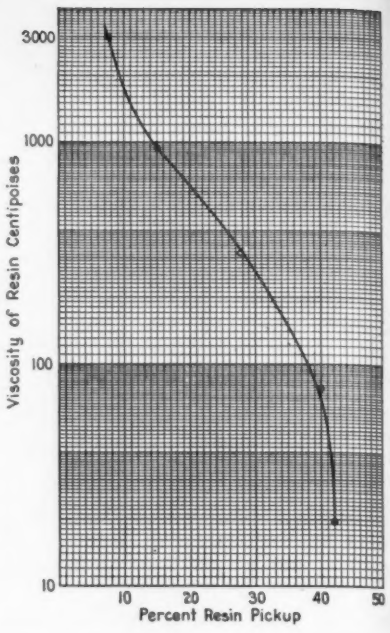
In an unimpregnated state, plaster of Paris forms may be considered a soft material capable of further fabrication. Design motifs, changing contours, and additional design elements may be included or modified without much additional cost, in a relatively short period of time and at room temperature. In other words, all of the engineering requirements may be reproduced on the plaster forms simply and with the assurance of dimensional stability.

After this work is completed, the furane resins are added to "resinify" the mass and convert the structure to a hard, durable consistency. These resins and their action may be likened to the heat treatment and hardening of steel, except that soft, workable plaster is converted to a hard, durable structure.

In arriving at the selection of a resin the mechanism of penetration was carefully studied. Penetration is possible largely because of fine capillaries which are formed in the plaster of Paris structure upon the evaporation of the free water. There is a limit to the amount of solids which may be added to water to form the pourable plaster mass, and a certain amount of free water is left over in addition to the water required for crystallization of the calcium hemi-hydrate.

Two alternatives are apparent: (A) Either use this free water as an avenue of introducing a water soluble plastics material; or (B) Remove the water and allow a capillary penetration of the resin. Both alternatives were thoroughly explored and it was found possible to obtain good results with either method, though best properties were obtained by the latter method.

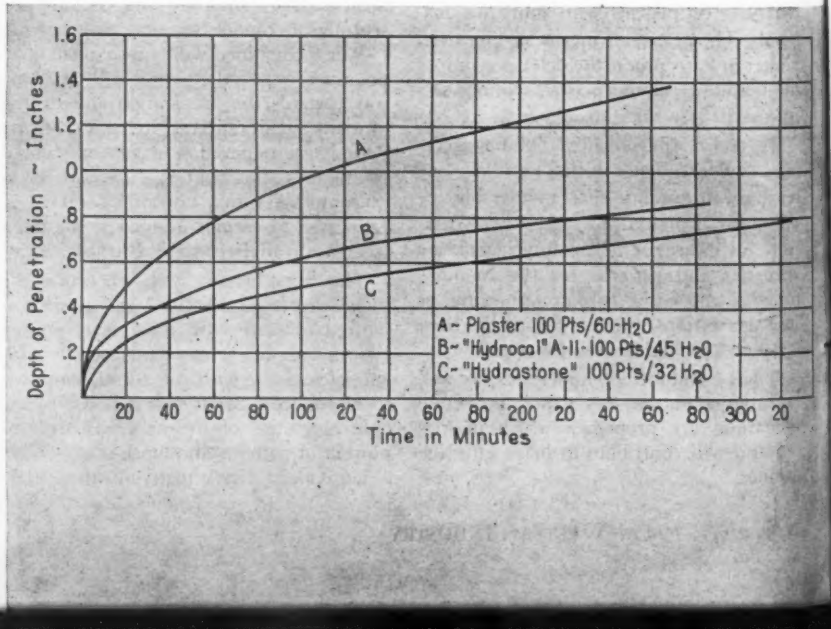
If 100 pounds of pure plaster are added to 60 pounds of water a thick, pourable



consistency is formed. If less water is used the mixture would be too thick to form a homogeneous dispersion. Approximately 17.5 pounds of the water are required to set the plaster chemically; the balance of 42.5 pounds of water constitutes the free water.

When the casting has completely set it will have uniformly dispersed voids in it corresponding to the volume of 42.5 pounds of water, thus determining the maximum amount of resin which may be absorbed for the 100 solids/60 H20 pour ratio. Of course, a higher proportion of water may be employed for pouring, thus forming that much additional free water which must be removed during drying. However, it also means that much additional resin which can be included in the form, and this may be of advantage under certain circumstances.

Assuming now that the freshly poured



"green" plaster form is to be impregnated, water soluble phenol-formaldehyde and melamine or urea formaldehyde resins may be considered. With adequate diffusion periods, good penetration may be obtained from these resins. Low viscosity solutions (under 50 centipoises) may be prepared with water and the above-mentioned thermosetting synthetic resins—present to the extent of 50-60% solids.

After the resin has been given a chance to diffuse into the "green" plaster, the free water must be removed before the benefits of the resin addition can be realized. This is accomplished either by long time atmospheric drying, or at an elevated controlled high temperature in an oven. The latter must be handled very carefully to avoid removal of moisture of crystallization, or the part may be weakened rather than strengthened.

When the water is removed and the resin cured, perhaps by catalysts included in the water mix, the plaster forms will be found to be hardened, and properties improved some 50-100%. However, that represents about the limit, because *the gain in properties of the plaster of Paris forms is directly dependent upon the extent to which the voids formed by the free water are filled.* The total resin gain through the water diffusion method will be quite low. It will be found to depend upon how thoroughly the water solution of the resin has replaced the free water, which more often exercises a diluting effect.

Other water soluble thermoplastics have been tried, with indifferent success because their much higher viscosity and molecular weight precluded effective and practical diffusion into the "green" plaster forms. Water soluble silicates and the like have also been considered and tried. At best, a fair build up of the resin at the surface was obtained with the thermoplastic polymers, with an improvement in surface hardness and gloss, but nothing more than what a good sprayed coating could accomplish.

Impregnating Dry Plaster

Diffusion into substantially dry plaster of Paris forms may be accomplished with good results, providing the correct type of resin is employed. The rate of penetration will be found to depend upon many factors, most important of which is resin viscosity and the previous solids/water ratio at the time of pouring. The optimum proportions of solids/water ratios recommended by the manufacturers of these materials are as follows:

Plain casting plaster—100 parts solids to 60 parts water.
"Hydrocal"—low expansion plaster—100 parts solids to 45 parts water
"Hydrostone"—high strength plaster—100 parts solids to 32 parts water

The diffusion of a furane resin of 2 to 3 centipoises viscosity into dry plaster of Paris castings is illustrated in Figure 2. The rapid diffusion of the furane resin should be noted. Straight plaster is best treated with Resin XP, an acid catalyzed resin; while "Hydrocal," which is buffered on the alkaline side, is best impregnated with Resin XR, an alkaline catalyzed furane resin.

Overnight, several inches penetration have been obtained into dry plaster of Paris forms, and while greater rates and amounts of penetration can be realized with the aid of vacuum, the entire technique may be accomplished at atmospheric pressure and at room temperature. Of course, the depth of penetration may be readily controlled, if only a surface penetration effect is required—though for optimum results, full penetration of the plaster of Paris forms is recommended.

The penetration rate is remarkably fast, and results are quite reproducible. From a practical point of view, it is interesting to note that over 2 years ago some heavy sections at least one foot thick were treated with these resins to obtain full and good penetration. Recently these materials have been made available commercially (Resin XP and Resin XR noted above from Furane Plastics and Chemicals Co.) and have contributed much to the life and durability of plaster of Paris forms and patterns.

Stretch press dies, hydropress form blocks, master mock-ups, foundry patterns, laminating dies, match and contour plates, etc. are a few of the many parts now in production from furane resin impregnated plasters.

Arguments For Northwest Air Orient Gateway

Arguments for establishment of the gateway for air traffic to the Orient in the Pacific Northwest rather than in the Twin Cities of St. Paul and Minneapolis in the Middle West consist of seven principal points ranging from future military necessity to the need for efficiency in load-building.

Backing the arguments for use of the Pacific Northwest gateway as opposed to that of the Twin Cities, recommended by the examiners of the Civil Aeronautics Board, are the mayors of five major western cities, the ports of Seattle and Tacoma, the Advisory Commission of Governor Mon C. Wallgren of the state of Washington, and the chambers of commerce of Seattle, Portland, Los Angeles and many other cities.

Chief recommendation in favor of the Twin Cities gateway, according to the findings of the examiners, is that it is nearer to the Orient by about an hour's flying time.

The seven arguments offsetting this minor advantage that will be lessened still more as flying speed increases are as follows:

(1) A Pacific Northwest gateway would necessitate construction of all American facilities while the Twin Cities gateway would entail use of Canadian facilities. In event of war in which Canada might be neutral American military traffic could not use Canadian facilities. In such a case, of course, the armed services could take full advantage of those constructed in use of the Pacific Northwest gateway.

(2) The Twin Cities route employs an artificial route rather than the natural one found in the Northwest.

(3) Since air transport cannot be divorced from water, rail and bus transport it would be unsound economically to have the gateway 2,000 miles from the great ports of the Pacific Coast, through which water traffic to and from the Orient flows.

(4) Eastern businessmen en route to the Orient would find it far more suitable to be able to visit their agents in Pacific Coast ports which they could easily do if the Northwest gateway is established, and which would be virtually impossible if the Twin Cities gateway was employed.

(5) The Twin Cities gateway, if established, would discriminate against the West to the advantage of the East in trade relations with the Orient.

(6) Since the Pacific Coast ports are the natural ports of entry for oriental commerce it would be inconvenient for oriental customers coming to the United States to enter through the Mid-Western gateway.

(7) Intermediate points in transportation load building are of prime importance for airlines as well as for railroads. The Twin Cities gateway would offer no such opportunity for immediate business as would occur for airlines using the Pacific Northwest gateway.

At about the same time that the seven point argument in favor of the Pacific Northwest gateway was publicly advanced Southern California, through the medium of the Board of Directors of the Los Angeles Chamber of Commerce, plumped for the establishment of a Central Pacific air route that would reach the Orient via Hawaii and the more distant islands of the South Pacific.

Its arguments were: (1) Fifty-three per cent of westbound overseas traffic comes from West Coast states and is entitled to Grade A service; (2) Disturbance of this core of traffic might result in serious economic consequences; (3) More than 350 national manufacturers who have branches in both Southern California and Hawaii require the service a direct air route would provide.

• Henry F. Grady, President of San Francisco Chamber of Commerce and American President Lines, and A. G. Wilson of War Shipping Administration, watch stevedores swing cargo aboard the S.S. Memphis City which reinaugurated commercial service to the Philippines.

FOREIGN TRADE—For The West

There is a Tremendous Market for Western Manufacturers in Foreign Trade, but Those Entering it for the First Time Should Use Caution

WITH the war's end American manufacturers are showing a steadily rising interest in the development of foreign markets for their goods. Improved production techniques that have occurred in industry during the war years, the increasing availability of labor and the release of many raw materials for peacetime manufacture, all combine to make industrialists welcome additional markets, despite the fact that needs of the domestic economy are enormous. At the same time, the destruction of so many production facilities in Europe and Asia during the war have placed an additional demand upon American manufacturers, giving them an opportunity to establish overseas outlets for their goods that can well become permanent assets in their organizations.

Here in the West, where a new industrial empire is rapidly developing, many manufacturers are acutely conscious of this and are justly determined that they shall have their fair share of the nation's export trade. Many of these, however, realizing that the business of foreign trade is virtually unknown to them except by name, are naturally very curious about what steps must be taken in its development. For these adherence to the following suggestions will be found especially helpful.

First of all the manufacturer should analyze his production facilities and his domestic market in order to discover whether entry into the foreign market is justified. If the results of this analysis indicate that a profitable proportion of his output can be made available for the foreign market, he should then proceed to determine just what the extent of that foreign market is and its potential size, area by area and country by country.

Since any careful estimate of such a matter involves an accurate knowledge of such diverse things as foreign credit and exchange, tariffs of foreign countries and U. S. Government regulations, plus the competition of other American products in the foreign field as well as the competition that might be expected from foreign competitors, it is obvious that the most careful study should be made.

In making this study two chief methods of going about it exist. First, one can engage the services of an expert in the field to make the study. Second, an organization can make the study itself.

This latter course, however, would involve so much work that a firm thinking to enter the export field in the near future would be well advised to engage the services of a person or organization competent to make the analysis.

If it is shown that a satisfactory foreign market exists for the product under consideration, the next step is to make a study of the best ways in which to develop that market. In other words, the problem then is to determine the best way in which to start upon the business of selling goods abroad.

Three Methods

Briefly, there are three methods by which this can be carried out: 1) setting up a foreign trade department with representative sales outlets overseas; 2) obtaining the services of one of the long-established exporting houses that act as foreign trade representatives for many American manufacturers; 3) selling that part of one's output that is destined for foreign trade directly to a firm that pays cash for it and resells it abroad.

Of these three methods the first is naturally the most expensive, one that would be possible only for a firm that had determined to spend a large sum of money in developing the foreign trade field. Any organization prepared to make expenditures on such a scale as called for in this method would generally be of such size as to have entered the field already in the years before the war. Exceptions to this would be found, of course, but as a rule that would be the case.

The second method would be considerably less costly. In effect it involves obtaining the services of one of the foreign trade organizations that handle the overseas sales of several different manufacturers.

Such an exporting house has already long established overseas contacts in several different countries. It is handling several different types of commodities none of which competed with another, but all of which are probably in the same or fairly closely related fields.

An Advantage Gained

One of the advantages gained by employing the services of such an organization is that the manufacturer's name and product would have a good chance of establishing themselves in the countries in which they would be sold. Obviously, if the manufactured item is an axe and is to be handled by an exporting firm that deals mainly in hardware items, overseas representatives during the years would build up the excellence of the axe they sold as being of a superior brand.

Accordingly, the manufacturer of the axe would tend to gain a certain amount of goodwill abroad that would prove of considerable value to him.

In this method, however, a certain amount of expense is involved in the handling of foreign trade. The exporting company that takes on the account would be able to do a better job if it has plenty of promotional literature plus substantial advertising funds to aid in selling the product abroad. Since the exporting company acts as the agent in making sales, the job of delivering the commodity on shipboard, of billing, and related details devolves largely upon the manufacturer, depending of course on the individual arrangements made. Here, too, then, there is added work and added expense that calls for the services of individuals well acquainted with foreign trade procedures as well as for substantial budgetary allowances.

The third method is the simplest of all. Essentially it consists of persuading one of the exporting firms that the manufacturer's goods would sell well in the foreign markets. Once this is done, and the exporting house has obtained orders for the goods the manufacturer merely ships them as instructed and receives payment directly from the exporter. All details other than the addressing of the shipment and its delivery to the railhead or dockside are carried out by the exporter who merely mails a check to the manufacturer.

Simplicity Not Enough

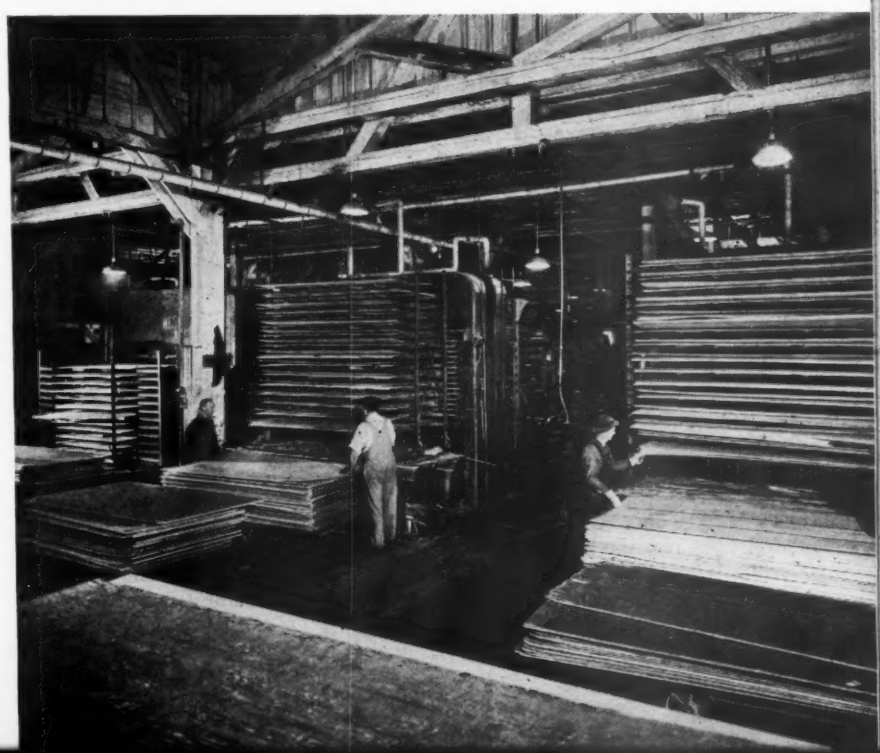
Simple as this method of doing business is it has disadvantages. The exporter in this case is more nearly, though by no means always, a buying agent for foreign consumers than he is a sales agent for domestic producers. Consequently there would be small justification for thinking that the exporter would push the line of the manufacturer or that he would carry it exclusively. Though the manufacturer is relieved of all details, having only to follow shipping instructions and endorse his check, he has no opportunity to build up strong customer relationships with the overseas market.

Of course, if his product is so outstanding that any user would be prone to insist upon having it, a sufficient customer relationship already exists, but most products are not so essential to their consumers as to bring them to the point of insistence.

For the smaller firms, however, that are just beginning to feel their way into foreign trade the existence of such exporting houses is of great value. Through their function a manufacturer can begin to get his goods into the foreign market while he gives the matter thorough study and builds the organization that his studies indicate are needed.

Of not the least consideration is the fact that if he finds it unprofitable to invest the required sum in developing overseas trade which either of the other two methods of handling it would demand, he is out of pocket no more through his selling to the exporting house than he would be in selling to any other domestic customer.

• Huge Merritt presses, 4x7, 4x8 and 5x10 feet, all equipped with hydraulic lifts at the infeed ends in order to facilitate the flow of material, are responsible for the steady production flow at the press department of the Cascades Plywood Corp. of Lebanon, Oregon. In the plant, one of the most modern in design on the Pacific Coast, production of exterior type panels, admittedly more difficult than interiors, is increasing rapidly.



Western States Council Concurs In Boot For Alcoa

THE Western States Council did not directly administer a kick to Aluminum Company of America at its meeting in Salt Lake City on October 8 and 9. But it did concur in the kick previously administered by the U. S. Attorney General's office, the Surplus Property Board and the Senate Small Business Committee.

By concurring in the Surplus Property Board's report on disposal of light metals plants, the council accepted the view that Alcoa should not be permitted to strengthen its already dominant position in the aluminum industry by acquiring government-owned plants. And by urging that certain key plants in the Northwest be leased to an unnamed "qualified light metals operator" or some equally qualified operator within 30 days, the council sought to hurry negotiations along for the Reynolds Metals Corporation.

An unscheduled surprise of the conference was the appearance of a spokesman for a partially identified group which proposes to buy and operate all the government financed aluminum plants plus one magnesium plant. The spokesman, Captain Robert T. Banks, Jr., said he represented Hybinette and Cary of Wilmington, Del., and a group of financial backers whom he did not identify.

Hybinette and Cary

The proposal of Drs. Hybinette & Cary, described as leaders in the field of aluminum metallurgical processes and alloys for the past 25 years, encompassed alumina, pig and fabrication plants built by the government in the Pacific Northwest and elsewhere and the Spokane magnesium plant. They suggested a down payment of $5,000,000, the remainder to be paid over a period not exceeding 50 years at not less than two per cent interest. They estimated that additional facilities costing $72,000,000 would be necessary to make the proposed integrated operation feasible.

The special light metals committee, under the chairmanship of D. K. MacDonald of Seattle, heard spokesmen for Alcoa, Reynolds, Columbia Metals Corporation and Olin Industries before drafting the report which was later adopted by the council without alteration.

Keen Johnson, vice-president of Reynolds, and Charles R. Boyle, of Seattle, Alcoa spokesman, clashed several times on the monopoly issue. Boyle argued that Alcoa should be allowed to bid on a free and open basis, regardless of the reports of governmental agencies.

The report, which flatly rejected the Boyle thesis, follows:

"It is the unanimous opinion of this committee that the delay in disposing of light metals plants is detrimental to the interests of business and labor in the western area of the United States. We hereby respectfully request immediate action in the consummation of disposal of the various light metal plants in the west to private business.

May Lose Workers

"It is our further considered opinion that unless sale or lease of these plants is made in the very near future the available labor supply for operation will be dispersed and create further delays in the much needed operation of these plants and jeopardize the eventual value of the government investment.

"We now understand the Surplus Property Board and the Reconstruction Finance Corporation have before them a proposal for lease or sale of certain key plants by a qualified light metals operator. We emphatically urge conclusion of negotiations with this or other equally qualified operators within 30 days.

"The committee accepts the report of the Surplus Property Board and indorses its recommendations, including those relating to studies to be pursued relative to power costs, freight rates and tariffs. In acknowledging the necessity for competition in the light metals industry the committee wishes to express its full appreciation for the efforts put forward by Alcoa during the recent war and to express the earnest hope that this company will continue in the operation and enlargements of its business.

"It is recommended by this committee that negotiations with any light metals company that may be under consideration for leasing or purchasing be fully and promptly investigated as to financial and management ability to carry forward the operation of these plants on a continuing basis. We fully concur in the Surplus Property Board's recommendation that bidders be given preference in accordance with competence and prospective ability to survive."

All in One

The Hybinette & Cary disposal plan, which has been submitted to Chairman W. S. Symington of the Surplus Property Board, lumps all the government-owned plants into one integrated operation.

"Because of freight differentials between finished materials and pig and hot rolled plate," they say, "only a small part of the output of the aluminum reduction plants can be made into raw materials for industry in the Bonneville district. Therefore, the operator must have the Chicago mill for finished sheet. He must have the Newark mill for rods and bars. He must have extrusion plants both in the east and west.

"These are all high production units which cannot be profitably operated at low capacity, but at capacity they can produce at low cost. Not one of these plants in its present location can be operated independently with success. The Phoenix plant must be moved but cannot be until the Cressona plant is restored."

The plan proposes that the government move and reerect plants now located at Baton Rouge, Riverbank, Los Angeles, Queens, Burlington, and Phoenix.

Appraisal Procedure

It rejects leases as impractical, first because no leasee would venture upwards of $125,000,000 capital necessary for additional facilities, cargo ships for the transport of raw materials, reopening of closed plants, etc.; second, because no industry would retool to use the metal which may cease to be available after five years; third, because uncertainty as to the future would prompt the best workers to leave; and fourth, because the insecurity of a lease would make the plants a curse rather than an asset to the communities in which they are located.

The suggested appraisal procedure is for the government and purchaser to each appoint three appraisers to work with a seventh who would be independent. Factors in determining value would include: average cost of building plants for the years 1920 to 1939; capacity under the most efficient known operation; location and expense of marketing; and replacement depreciation at not to exceed one per cent a month for the time the plant was operated.

Value of the Hurricane Creek plants, both alumina and fluorides, would be based upon the estimated supply of local bauxite, and the bauxite and raw materials on hand would be appraised on a basis of average price for the years 1920 to 1939.

Two other factors are emphasized by Hybinette and Cary as necessary for a feasible operation: (1) a power supply at costs competitive with Alcoa's; and (2) breaking of the cartel control of foreign bauxite.

They express the opinion that aluminum can be brought down to a price of 12½ cents per pound for pig and that this will increase consumption 8 to 10 times. They

say, too, that they are prepared to buy the Spokane magnesium plant at its reasonable market value and sell magnesium at a lower price than has heretofore been known in this country. And they claim they and their unnamed associates are prepared to do the job entirely with private capital, at private risk and without government subsidy.

The proposal aroused considerable interest but indications were that council members would keep eyebrows skeptically raised until they find out more about the financial backing.

Hybinette and Cary are practically unknown at the Surplus Property Administration and RFC, according to direct information from *Western Industry's* Washington editor, but they are supposed to have substantial funds available to them. Further than that it is also reported that they own patents valued at $10,000,000.

Reynolds is the only bidder to date on the aluminum plants. Others who have expressed interest, according to the Surplus Property Board, include American Smelting and Refining Company, Kaiser Company, Inc., Bohn Aluminum and Brass Corporation, Olin Industries, Inc., and Aluminum Company of America.

The Olin representative at the Mead Committee hearing at Spokane said his company, largest copper and brass fabricators in the country, had gained considerable wartime experience with aluminum, and were interested in utilizing it through getting permanent possession of the DPC plant at Tacoma which they have been operating.

Reynolds' interest seems to be contingent on getting the Hurricane Creek plant in Arkansas, in order to assure themselves of a supply of alumina.

New Developments On The Atomic Scene

Approximately 50 scientists, businessmen and educators assembled recently in an isolated spot in New Hampshire for a five day discussion of the implications of atomic bombs.

During the meeting it was brought out that the reason for the United States' present supremacy in the field of atomic power lies in the existence of the tremendous industrial plants in Washington and New Mexico, as well as in Tennessee, which make possible the processing and refining of Uranium-235.

Already, according to reports from Washington, D. C., many American scientists believe that Russia now possesses the secret.

While it is felt that discussions at the New Hampshire meeting have no present commercial use for atomic power, it is thought that its possibilities for making various substances radioactive for therapeutic purposes were thoroughly explored.

Aluminum's Position In Postwar Markets

By E. J. APPEL
Assistant Vice-President, Reynolds Metals Co. and Manager of Longview, Wash., plant

WE HAVE heard and read much about aluminum and its alloys during the interim of the past five years. Some have claimed that this has been a light metal war, and that without them we would not have wrought the miracle that gave us the mastery of the air; while others, less informed, have often pondered its true position in a world of metals. It is to the latter that we address this article.

The great peacetime development plans of industry are being shaped on an organized and scientific basis that has had no parallel in modern times. In fact, it bears but slight resemblance to the more feverish expansion that took place in the days after Pearl Harbor.

With the exception of silicon, aluminum is the most abundant metal in the world. The lithosphere or earth's crust contains the constituent alumina, of the order of 15 per cent. Its natural compounds have been known for many centuries; the use of certain of these for dyeing purposes was described by Pliny nearly 2,000 years ago. Yet it was not more than one hundred years ago that aluminum was isolated for the first time.

More than sixty years elapsed after this discovery before the metal was made in sufficient quantities and at a sufficiently low price to enable it to gain its place among the ordinary metals of commerce. Almost immediately a new industry grew rapidly. At the outset of the century the world consumption had increased to 12,000,000 lbs. per year. Prewar 1939 consumption in the United States was 335,000,000 lbs. per year, while in 1944 American output exceeded 1,552,000,000 lbs. per year and is anticipated to rise in the ensuing years.

The production of metallic aluminum from the raw material, as practiced today, is divided into two distinct phases; first, the preparation of pure alumina from the mineral ore, which is done by a wet chemical process, and subsequently the electrolytic reduction of the oxide.

Practically all common rocks, clays, shales and various soils contain aluminum, which occurs as a silicate or as an oxide. The material usually used for aluminum production is a mineral known as bauxite, which exists in many varieties. It is essentially a mixture of oxides, principally those of aluminum, silicon and iron, the proportions of which vary according to locality.

The process of extraction commences with the crushing and grinding of the ore, which is then digested with caustic soda at increased pressure so that the alumina goes into solution as sodium aluminate. The iron oxide and lesser impurities present in the bauxite are insoluble and the silica present reacts with the solution of sodium aluminate and is filtered off. The residue, known as red mud, containing the iron oxide, may become a by-product such as pigment or may even be discarded.

This aluminate solution is unstable and on cooling slowly decomposes, with the precipitates of aluminum hydroxide. This precipitation is accelerated by the addition of a little aluminum hydroxide and by the agitation of the solution by stirring.

The hydrated alumina is separated by filtration and is calcined to drive off the water of combination, leaving the alumina as a fine white anhydrous powder, ready for electrolytic reduction.

A cell, simple in construction, is employed for the electrolytic reduction of alumina. It consists of a large rectangular open bath, lined on sides and bottom with carbon or a carbonaceous pitch, this serving as the cathode. The anodes consist of a number of carbon blocks which dip into the open top, whose height may be adjusted as the carbon is consumed. The bath is packed with alumina and cryolite.

(Continued on Page 54)

• Northrop Aircraft puts some of its eggs in a new basket. This lightweight aluminum hand truck was built by Northrop-Gaines, a subsidiary, by aircraft fabricating methods developed by the parent company. The truck weighs about as much as one of the 30-lb. aluminum ingots. It is being load tested to 5330 lbs.

ALUMINUM *(Continued from Page 53)*

The mixture is readily fused and kept molten by the heat of the currents passing between the anode and cathode, which at the same time dissociates the alumina into oxygen and aluminum. The metal is then tapped in a molten condition from the floor of the cell and cast into ingots. The liberated oxygen combines with the carbon anode to form carbon monoxide, finally burning to carbon dioxide. The cryolite itself remains unattacked at the voltage applied and serves merely as a flux or solvent for the alumina.

High purity aluminum, although having many desirable inherent physical properties, such as good corrosion resistance, high electrical and heat conductivities and ductility, lacks the strength that we have grown accustomed to associate with aluminum. These added mechanical properties are contributed by elements known as alloying agents.

Alloying elements in aluminum usually consist of copper, manganese, silicon, magnesium, zinc, nickel, chromium, lead, bismuth, titanium, and vanadium. Each of these elements in combination with aluminum or compounded within each other contribute such characteristics as high strength, added corrosion resistance, machinability, strain or work hardening, weldability, increased strengths after solution heat treat, and formability, to mention merely a few.

Viewing aluminum with an eye to strengths that may be obtained, and comparing it to such metals as copper, red brass, or steel, we find it ranking first, when considering weight savings.

	Density lb./in.^{3}	Specific Gravity *2
Aluminum	0.098	2.74
Steel (0.20C)	0.284	7.86
Red brass	0.316	8.75
Copper	0.322	8.92

During the initial phases of the war weight savings in aircraft was instilled uppermost in the engineering mind. However, with sufficient experience and knowledge gained in the various theatres, aircraft soon demanded larger planes with the same weight/strength ratio. These requirements gave birth to such alloys belonging to the dural and copper, magnesium and zinc families, typical of which are Reynolds R301 and R303.

Although from the accompanying table we see that aluminum has one-third the modulus of elasticity as compared to steel, this factor may be used to advantage when designing loaded members taking more than a nominal stress.

The ultimate tensile strength of R303-T275 may be taken as 80,000 p.s.i. as guaranteed, so that considering structural steel as 60,000 p.s.i., an extruded aluminum bar applied in pure tension need only be 10 per cent larger in section than a steel bar for equal purpose. Since the specific gravity of aluminum is 2.7 while that of steel is 7.8, an aluminum tie rod would have a weight of 45 per cent of an equivalent steel bar. For short compression members a similar ratio would hold, as it is usual in steel to assume the same design stress in compression as in tension.

As the length of compression members increases the ultimate load decreases, until for long slender columns the compression strength of the metal has no bearing on the strength of column since failure takes place by buckling (Euler Formula). Therefore, for intermediate lengths struts, the weight savings obtainable in aluminum will vary between 40 and 60 per cent.

TYPICAL PROPERTIES OF ALUMINUM

	Tensile Strength lb./sq. in.	Yield Strength lb./sq. in.	Elongation in 2" %	Tensile Modulus of Elasticity 10^6 p.s.i.
R301W Sheet	61,000	41,000	20.0	10.3
R301T Sheet	69,000	61,000	9.0	
Steel (SAE 1020) hot rolled	69,000	45,000	31.0	30.0
Steel (SAE 1020) water quenched and drawn at 1000° F.	90,000	62,000	22.0	
R303T315 Sheet	75,000	69,000	9.0	10.4
R303T275 Sheet	79,000	73,000	9.0	
R303T315 (extruded shape)	83,000	79,000	9.0	
R303T275 (extruded shape)	88,000	82,000	10.0	
Red Brass (cold drawn)	70,000	65,000	15.0	15.0
Red Brass (cold rolled)	75,000	70,000	4.0	
Copper (cold drawn)	45,000	40,000	20.0	15.8
Copper (cold rolled)	52,000	48,000	5.0	

NOTE 1. *Properties on aluminum alloys are cross grain.*
2. *Properties cited are for gauges exceeding 0.060 inches.*

Aluminum's Elasticity

Another case in which the lower modulus of elasticity of aluminum must be taken into consideration, and here again may serve to advantage—in a recent design of a 15 ft. long truck beam formerly made of steel a small increase in depth of section from the neutral axis to outer fibre resulted in the same required deflection values with a weight saving of 50 per cent. The lower modulus will also exert some influence on the resistance to shock, as the stresses produced by impact will be reduced by the greater elastic yield of the metal, or in simpler terms, aluminum can absorb approximately three times greater energy or stress than steel before we encounter permanent deformation.

Considering the fabrication of aluminum, and its alloys, it might be said that existing facilities could readily be adapted to work aluminum, particularly those alloys that depend upon work hardening for its development of mechanical properties such as 2S, 3S, and 52S. This would also be applicable to those alloys that may receive a subsequent solution heat treatment followed by rapid cooling as 24S, 17S and R301.

However, when contemplating the higher strength alloys to be utilized in the "W" or "T" tempers, alteration or design changes of dies are necessary. Compared to steel or brass used for forming or drawing aluminum carries with it a greater springback. The usual die change will, therefore, require greater clearance angle and larger bend radii.

The conventional method of joining brass and steel may also be likened to aluminum and its alloys. Such methods as brazing, soldering, gas and arc welding are amenable to aluminum. One must bear in mind that welds in aluminum usually result in an annealed zone, located at the area adjacent to the weld; this factor is true of steel, too. In the heat treatable alloys this may be overcome by the solution treatment, transforming the less strong area into one similar in properties to the parent metal.

In the welding of aluminum careful attention must be given to such factors as design of weld, thermal stress distribution, preheating, temperature and jigging.

Applications of aluminum are legion. It is neither the intent nor the purpose of this article to mention all that prevail to date. However, referring briefly to particular applications will suffice.

In the construction of earth works involving the lifting of large quantities of surface ground, aluminum has found its way into crane booms and jigs. It has found that booms of any required length can be constructed with such alloys with a weight saving of 40 to 50 per cent without sacrifice of strength or rigidity. This weight reduction enabled an increase in the capacity of the bucket and to a large extent, the extension of boom length, thereby elongating the reach.

Value to Transport

Fire fighting equipment and escapes designed in aluminum has permitted longer ladders, with an increased factor of safety.

Transportation has long realized the value of incorporating or substituting with aluminum. The recent fabrication of 30 aluminum box cars with a weight reduced

as much as 9,000 lbs. has brought about increased pay loads and speeds, with existing power equipment.

Aluminum not only offers advantages in movable structures, it is also reasonable to expect that the benefit of lightening is to be found in structures essentially stationary. The recent reconstruction of the Smithfield Street Bridge in Pittsburgh consists of two 360-ft. spans with shorter approach spans. As traffic increase made the bridge inadequate for service, the alternative to demolition and rebuilding resulted in the replacement of the existing roadway with aluminum beams and stringers. It was found that a savings of about a ton per linear foot bridge could be saved, while simultaneously permitting cancellation of certain traffic restrictions. The total cost was $276,436 which was of the order of one quarter the cost of the new bridge.

High purity aluminum has 64 per cent the electrical conductivity of the International annealed copper standard. Therefore, on an equivalent weight basis with copper, the electrical conductivity is exceeded. This makes aluminum particularly suited to overhead power lines, bus bars and rural electrification.

Copper Conductors

For example, a copper conductor of .15 sq. in., erected on a 600-ft. span length, with a safety factor of 2 under load of ⅜-in. ice plus 8 lbs. per sq. ft. wind pressure at 22° F., will have a sag of about 14 ft. at 122° F. in air. Under identical conditions for steel covered aluminum, conductors can be 7 ft. shorter without reducing the ground clearance.

Reflectivity of white lights, infra red rays, ultra violet rays and heat are extraordinarily high on prepared or polished aluminum. In the order of the aforementioned these percentages may be anticipated 87 per cent, 97 per cent, 84 per cent, and 87 per cent, respectively. Thus, aluminum has been incorporated in housing, for constant temperature maintenance, refrigeration economy, heating and many other purposes.

The food industries have long been made aware of the fact that aluminum imparts no taste, odor or color to its products. Fish may be so canned. The dairies and breweries have replaced much processing and storage equipment, formerly made in other metals, with aluminum, although under some conditions aluminum is not suitable. It is advisable to consult with an aluminum manufacturer before application, particularly where food unstability or change is a factor.

As a metal aluminum offers many advantages not possessed by other materials when considering it for application in the chemical industries. Its present status in such industries as acetic acid, ammonia, citric acid, gluconic, nitric acid, ceramics, disinfectants, coke by-products, petroleum, leather, laundry paint, sewage, photographic and many others have found that aluminum becomes not only economical but also offers many desirable characteristics not ordinarily possessed in the metals used previously.

Processes such as crushing, separation, evaporation, fermentation, sterilization, filtration, etc., have warranted the application of aluminum.

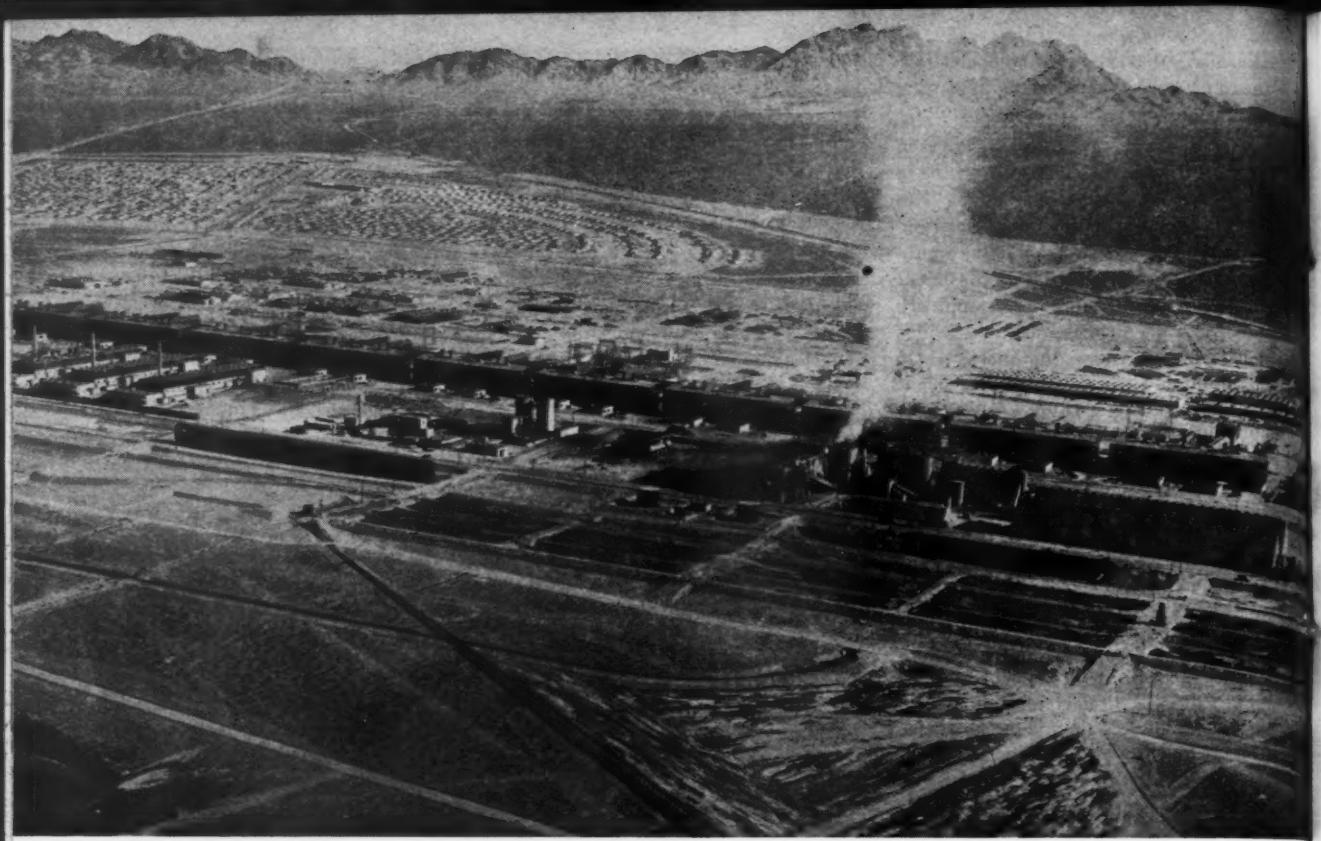
For those manufacturers with an eye to the aesthetic the past few years have evolved many new finishes for this metal. Attractive colors and patterns may be permanently imparted to aluminum. Those seeking colored surfaces in metals that are hard and abrasion resistant, coupled with its many other characteristics, may now find it in aluminum. The white metals such as silver, nickel and chrome have been plated successfully to aluminum. Simulating gold colors and effects may also be accomplished.

Although the versatility, attractiveness and physical properties of aluminum may supply many of the answers during this conversion period, aluminum may not be the answer in all cases. Its limitations have not been discussed here, since it is not within the scope of this article, nor is it within the scope of this article to discuss the increasing applications of aluminum foil and aluminum paints. It is therefore recommended that those interested in aluminum or its variety of alloys consult with the aluminum manufacturer, giving him an opportunity to review the problem in detail.

References:

1. Production of Aluminum—British Aluminum Ltd. pamphlet
2. Properties of Some Metals & Alloys—International Metal Co. Res. Div. 1943

• Problems of Western plants in induction and dielectric heating can now be solved in Westinghouse's new laboratory at Los Angeles. Below, Dr. R. A. Nielsen changes the power level on one of the laboratory's radio frequency generators which heats metals by means of high frequency radio waves, providing a new technique in "induction heating."



• Around $130,000,000 went into this vast Basic Magnesium establishment on the Nevada desert. Since Anaconda stopped making magnesium there, Stauffer Chemical and Cornwall Warehouses have taken leases on some of the space. Rheem Mfg. and Western Electro-Chemical had their leases cancelled, but negotiations are practically completed for two additional chemical companies to come in.

SURPLUS—Some Western Plants Sold

RECONSTRUCTION Finance Corporation has begun to sell some of its war plants in the West. The first of these purchases by the war-time operators or others, reported by RFC, are as follows:

At Empire, Colorado, a mining plant by the Molybdenum Corporation of America for $351,503.99, the exact cost of the plant to the government; at Santa Ana, Calif., a vegetable dehydrating plant, which cost the Government $194,-897.15, to Case Swayne Co., of Merced, Calif., for $75,000; at Tacoma, Washington, a charcoal plant, which cost the Government $121,230.06, to Earle Rowe, of Tacoma, for $21,000.

Plants Leased

Surplus plants leased in the West: at Tacoma, Washington, the Pacific Carbide & Alloys plant, to Independent Insulation, Inc.; a Pine Top Asbestos Mine property at Globe, Arizona, to Globe Arizona Asbestos Co.; aluminum plant at Los Angeles to Bohn Aluminum & Brass Corp.; a chemicals plant at Richmond, Calif., to the General Chemicals Co.; an oil refining plant to the Utah Oil Refining Co., at Salt Lake City.

Details about the properties listed as surplus and in many instances special descriptive brochures are available at the regional RFC offices in Denver, Helena, Los Angeles, Portland, Salt Lake City, San Francisco, Seattle and Spokane.

Negotiations For Sale

Negotiations for sale or lease of the following plants previously listed as surplus include the following: Airesearch Manufacturing, Phoenix; Consolidated Vultee Aircraft Corp., San Diego; Joshua Hendy Iron Works, Berkeley; Western Gear Works, Lynwood, Calif.; Washington County Flax Growers, Cornelius, Ore.; Willamette Valley Wood Products Co., Eugene; Iron Fireman Mfg. Co., Portland; Washington Iron Works, Seattle Oxygen Co., Seattle; Utah Oil Refining Co.

Negotiations also are under way for those plants marked with an asterisk in the following October listing. The three Douglas plants cost the government more than $24,000,000 and the two Utah Oil Refining Co. plants $15,900,000, while the three Lockheed plants at Burbank cost more than $22,000,000.

October Listing

Arizona

Globe: Pine Top Asbestos Mine. **Litchfield Park:** Goodyear Aircraft Corporation. **Miami:** Castle Dome Copper Co., Inc.* **McConnico:** General Fiber Products Corp. **Morenci:** Phelps Dodge Corp. **Phoenix:** Aluminum Company of America. **Tucson:** Consolidated Vultee Aircraft Corp.

California

Bakersfield: Mohawk Petroleum Co. **Benicia:** Yuba Manufacturing Company. **Berkeley:** Goldfield Consolidated Mines Co., Cuttee Laboratories, Inc. **Burbank:** Lockheed Aircraft Corp.,* two plants, Western Air Lines, Inc., (Lockheed Air Terminal), Menasco Manufacturing Co.,* Industrial Formings Co. **Chula Vista:** Rohr Aircraft Corporation. **Culver City:** Kaiser Hughes.* **Delano:** Columbia Broadcasting Co. **Dixon:** National Broadcasting Co. **Downey:** Consolidated Vultee Aircraft Corp. **El Segundo:** Standard Oil Company of California.* **Emeryville:** Merrill Products Co. **Glendale:** Kinner Motors, Inc.* **Hawthorne:** Northrop Aircraft, Inc.* (two plants). **Huntington Park:** Kobe, Inc. **Inglewood:** North American Aviation, Inc.* **Long Beach:** Douglas Aircraft Co., Inc.

Los Angeles: Phelps Dodge Copper Products Corp., Douglas Aircraft Co., Inc.* (Manchester Ave. and Sepulveda Blvd. plants), Bohn Alum-

inum & Brass Co.,* Goodyear Synthetic Rubber Corp., Pacific Aviation, Inc.,* Dow Chemical Company, Shell Union Oil Company, Southern California Gas Co., Pacific Tube Co.,* Western Electro-Chemical Company,* Weber Showcase & Fixture Co., Inc.* **Manteca:** Permanente Metals Corp. **National City:** Tavares Construction Co., Inc.* **Newark:** Westvaco Chlorine Products Co. (two plants). **Norwalk:** Wilshire Oil Co., Inc.*

Oakland: Associated Iron & Metal Co. **Pasadena:** Vard, Inc.* **Pittsburg:** Columbia Steel Co.,* California Scrap Iron Co.* **Richmond:** Standard Oil Company, General Chemical Co. **Riverbank:** Aluminum Company of America. **Saltus:** California Rock Salt Co.* **San Bernardino:** Day and Night Flare Corporation. **San Diego:** Consolidated Vultee Aircraft Corp.* **San Francisco:** China Aircraft Corp., Stuart Oxygen Company. **Santa Ana:** Compak Foods, Inc. **Santa Monica:** Douglas Aircraft Co., Inc.* **Sunnyvale:** Joshua Hendy Iron Works.* **Torrance:** Aluminum Company of America,* National Supply Co.* **Turlock:** Day and Night Flare Corp **Van Nuys:** Lockheed Aircraft Corp. **Vernon:** Axelson Manufacturing Co.,* Kinney Aluminum Co.*

Colorado

Colorado Springs: Aircraft Mechanics, Inc. **Denver:** Continental Airlines, (adjacent Denver Municipal Airport). **Minnequa:** Colorado Fuel and Iron Corporation. **Northgate:** Western Fluorspar Corp.*

Idaho

Pocatello: J. R. Simplot Fertilizer Co.

Montana

Columbus: Anaconda Copper Mining Company,* (two plants). **Butte:** Domestic Manganese and Development Company.

New Mexico

Carlsbad: International Minerals and Chemical Corp. **Los Lunas:** Zuni Milling Company.*

Nevada

Henderson and Gabbs: Basic Magnesium, Inc. **Las Vegas:** Manganese Ore Company.

Oregon

Eugene: Approved Flax Co., Silica Products Oregon Ltd.* **Jefferson Village (Marion County):** Santiam Flax Growers.* **Marshfield:** Southwestern Engineering Co. **Portland:** Willamette Iron & Steel Corp. (three plants, negotiations proceeding for Plant No. 1 and 2), Radio Specialty Mfg. Co.,* Air Reduction Sales Co., Shofner Iron & Steel Works.,* Columbia Steel Castings Co., Pacific Chain & Mfg. Co., Northwestern Ice & Cold Storage Co. (two plants), Hyster Co. **Roseburg:** Youngs Bay Lumber Company, Inc.* **Salem:** Columbia Metals Corp. **Troutdale:** Aluminum Company of America.

Utah

Blanding: Blanding Mines Co. **Geneva:** Columbia Steel Company. **Ironton:** Columbia Steel Company* (blast furnace). **Lehi:** Gladding, McBean & Co. **Marysvale:** Kalunite, Inc. **Monticello:** Vanadium Corp. of America. **Salt Lake City:** Kalunite, Inc., Eitel-McCullough, Inc.,* U. S. Vanadium Corp.,* Utah Oil Refining Co.*

Washington

Bellingham: Puget Sound Pulp & Timber Co.* **Houghton:** Lake Washington Shipyards. **Metaline Falls:** American Lead, Zinc and Smelting Co. **Renton:** Boeing Aircraft Co., Pacific Car & Foundry Co.* **Rock Island:** Wenatchee Alloys, Inc. **Seattle:** Stetson-Ross Machine Co., Boeing Aircraft Co. (two plants). **Spokane:** Aluminum Company of America (Mead and Trentwood plants) Electro Metallurgical Co. **Tacoma:** Olin Industries, Inc., Wilkeson Products Co., Pacific Carbide & Alloys Co., Hooker Electro-Chemical Co.,* Coast Carbons, Inc.

Wyoming

Cheyenne: Frontier Refining Corp. United Airlines Transport Corp. **Laramie:** Monolith Portland Midwest Co.

*(*Designates those plants for which sale or lease is being negotiated.)*

Northwest's Chemical Industries Are Vital

By IVAN BLOCH
Chief Industrial and Resources Development Division, Bonneville Power Administration*

DEVELOPMENT OF chemical industries in the Pacific Northwest is an integral part of the future of the West Coast as a whole. The two cannot be separated.

Briefly summarized, it seems to me that the Pacific Northwest with its huge power development will continue to be an electrochemical and electrometallurgical center, but that it must rely heavily on other parts of the West not only for markets but also for a variety of raw and semi-processed materials. The rest of the West similarly, in its forward progress, will draw upon the Pacific Northwest for those items which the region can produce advantageously.

It might be best to point out at this time some of the key problems which face the Northwest in this respect. Generally speaking, we do have available in adequate commercial quantity, the greater portion of the so-called 34 materials basic to chemical industry.

Phosphate Deposits

Most striking are the phosphate deposits of Idaho and Montana which, we feel assured, will be the base for important phosphorus industries. However, in terms of some of the most important ones, we have yet much to do.

Salt, of course, will continue to be shipped to our plants from the Bay area. Certain important regional deposits of sodium carbonates are intriguing in their possibilities. However, more exploration work to determine quantity and quality is needed.

As to limestone, we know there are substantial, and even enormous deposits of the material, but we know little about them. Intensive exploration with correlated chemical analyses is in order.

Interest already is active on the part of state and commercial groups so that it is only a matter of time until the region can really know where its best limestones are. The same can be said about silicas—both sand for glass, as well as quartz and quartzite for silicon product industries such as abrasives—in which there is much active interest.

The really critically missing basic material is carbon, and on this there must be and will be a campaign of development, both as to raw material sources and as to treatment.

Carbon is available abundantly in the Pacific Northwest and by import from other sections adjacent to the region such as Canada, Utah (for coal and coke), and from California (for petroleum coke). However, rigid requirements for metallurgical and chemical purposes such as for the production of calcium carbide and phosphorus chemicals impose a burden as yet too onerous on local carbon as now available.

I don't believe any carbon technologist doubts the practicability of making available carbon of the proper specifications, whether from coal, petroleum, or wood. But we must keep in mind that to be a favorable element in a competitive situation—and that is the only kind of situation we can be interested in—carbon at around $6 per ton delivered at tidewater establishments is a "must."

This is not the absolute limit, but it is something to shoot at. At present, the best we can do in the Pacific Northwest is closer to $10, and more frequently between $10 and $13 per ton delivered.

There are several ways of approaching the problem, but the one sure way of not approaching it properly is on the basis of what "the traffic will bear." Therefore, all-out research in the techniques of production, treatment, and marketing is necessary.

Methods of washing, leaching, blending must be continuously explored. It may be that a wood coke or specially treated char and charcoal will provide a partial answer in combination with other carbon chars and cokes held together by a suitable binder. At any rate, no research approach should be ignored. The job is difficult and at best a long one. I believe that the federal government, together with our best private laboratories such as those of the universities and of the petroleum companies should tackle the task with adequate funds for staff and equipment.

Obstacles

I feel that there are some very real obstacles—from the standpoint of raw materials—to the expansion of chemical industries in the Pacific Northwest. But these obstacles can be overcome in three ways—all pursued in concert: first, the expanded research in both the location and treatment of resources; second, the highly necessary and desirable downward revisions of freight rates; third, the development of imports from foreign sources to supplement what we do not possess adequately.

**From paper delivered before the Northern California Chapter, American Institute of Chemical Engineers, San Francisco, California, Sept. 20, 1945.*

The employer should receive the following benefits from a properly designed incentive plan:

1. Greater output per hour on each job, through lower unit costs for direct labor and overhead.
2. Accurate predetermination of costs—essential in mass production industries which contract for production in advance.
3. Stabilized unit labor costs.
4. Improved industrial relations—less bossing and watching needed to keep the employee's mind on the job.
5. By-products of the new production standards, apart from the incentive plan itself, yet essential to it: Improvements in planning, scheduling, and coordinating production, and in forecasting equipment and manpower needs.

The employee should receive the following benefits:

1. Greater security of employment through greater competitive success of their company.
2. Better worker conditions, less fatiguing operations, fewer hazards on the job.
3. Less bossing and watching—the foreman has become an aide and ally.
4. Known workloads, known to be fair and not heavier for one job than for another.
5. Opportunity, right on the job, to increase earnings from ten to 25 percent.

What a successful reconversion incentive plan should do:

1. Be fair to both employer and employee in its design and administration.
2. Provide a reward in the form of increased earnings for the employee who is willing to increase his production.
3. Base this increase in earnings directly in proportion to the increased production.
4. Be simple enough that every employee can readily understand it and compute his own pay.
5. Not create a penalty for factors beyond the worker's control; therefore it is preferable that the plan incorporate a minimum guaranteed hourly rate.
6. Be accurately scaled on standards established by operational analysis, standardization, and time study.
7. Not restrict the amount of earnings; that is, the standard should be guaranteed unless changes occur which clearly alter the job.
8. Have full managerial backing and be tied closely to other managerial controls.
9. Operate so as to reduce total unit costs.

Profitable Incentive Under Price Control

By E. K. YOUNG
E. K. Young & Co., Management Engineering, Los Angeles

HOW CAN a manufacturer maintain take-home pay for his employees at war-time levels, yet produce peacetime goods at a cost that permits a fair profit under present price ceilings?

This dilemma confronts many Western business managers as labor continues to press for higher wages while price control authorities remain adamant. Some business men have felt that further price concessions inevitably will be made by Government, but others are losing no time in seeking a solution that will guarantee results. They realize that sooner or later, they will have to meet competition from larger or better-entrenched producers, and that they must take immediate steps to whittle down unit costs if they are to stay in business permanently.

That an answer to this $64 question can be found, already is being demonstrated. Alert managers are realizing that some techniques which paid off well during the war in production schedules conquered and manpower bottlenecks broken, now can be applied directly to meet the new problems of civilian goods manufacture.

Typical is the case of the "A" Company, which formerly made kitchen utensils but speedily converted to the manufacture of aircraft parts. A serious crisis arose when the plant was well along on an ambitious series of war contracts.

Among the large number of new employees that had been hired, labor turnover began to take unexpectedly high toll, causing productivity to decline until production schedules became a continual nightmare. As manpower shortages tightened, replacements became increasingly hard to get. Frozen at pre-war levels, wages were too low to compete with higher rates being paid by most aircraft and shipbuilding firms.

In desperation, "A" Company officials called in a production expert who recommended a complete overhaul of plant practices and installation of a wage incentive plan.

First tangible reaction was a sudden drop in labor turnover. Swelled by the new incentive bonuses, the new take-home pay was comparable to the prevailing rate in war industry and effectively discouraged job-shopping. Out-put promptly rose and production quickly got back on schedule. Final results were (1) 30% increase in production; (2) 20% reduction in unit costs, despite (3) 25% increase in hourly earned rates.

V-J Day brought a brand-new headache as the management began to look at its new peace-time job through the eyes of the sales department instead of the production division. Gone, of course, was the CPFF system, where cost was not a factor to be considered.

Instead, the company knew it must operate under its old ceilings or face interminable delay while appealing for price relief. At the outset, competition probably would not be too keen, for most competitors would be newcomers without previous experience in the field; but competition would eventually enforce stringent economies in production costs.

Mindful of how unit costs had dropped after its war production set-up had been overhauled, the management decided to seek a comparable rejuvenation of its civilian goods production set-up. As a result, the company took the following steps:

1. *Standardized parts and components,* using as few different parts, screw thread variables, and sizes and shapes as possible.

2. *Streamlined manufacturing methods,* processes, and assemblies. Found the best tooling, feeds, and speeds; revamped material handling, control, and hand-motion techniques.

3. *Pre-planned production.* Grouped related items for full machine loads with lowest change-over factor. Balanced work-in-process inventories with economic and sales controls.

4. *Revamped its wage incentive plan,* including all productive, non-productive, and supervisory employees. Set fair production time standards. Stabilized hourly rates by job evaluation.

5. *Developed a standard cost accounting procedure.*

Morale in the plant was at a low ebb.

Most newer employees had been released; experienced production line employees whom the management wanted to keep had been given temporary layoffs; and only the clerical force, busy on termination records, and a few engaged in retooling, were at work. Shorn of overtime, pay envelopes looked thin and there was much complaining in the plant. Management sensed difficulties ahead.

The union did not oppose the idea of a peace-time incentive plan—it cooperated in developing it. Effect was to end the disquieting talk in the shops and to set the stage for serious application to the new peace-time job.

At this moment, time studies are being made on test runs of the new post-war line, which already is being prepared for production, and there is little doubt that the new pay schedule will be satisfactory to employees and management alike. Preliminary analysis promises some production economies that should bring costs plus a fair profit margin safely within the old price ceilings.

With costs pre-determined under the new cost accounting plan, the company is able to go ahead and plan a sales program with a sound foundation for profitable operation.

As this is written, most Western plants —particularly those born during the war— are still in the stage where product development and creation of a market seem the paramount issues.

It should not be forgotten that to enter a market without definite knowledge of production costs, is to court disaster. Caught between the upper and nether millstones of low price ceilings and high wages, a manufacturer must know his costs or he may later have to withdraw because he cannot operate at a profit.

No marketing program should be laid out without immediate cost estimates based on time studies. Where extensive retooling is involved, many important questions must remain unanswered until production lines are actually established. These uncertainties may mean the difference between profit and loss.

If a manufacturer is committed to a straight hourly wage, he sets up an estimated cost which may prove an intolerable burden in case expected volume fails to develop. Also, day-to-day costs may fluctuate widely. A properly designed incentive system, on the other hand, is sufficiently flexible to meet all conditions, yet puts a ceiling on unit labor costs. It is the only way labor unit costs can be effectively stabilized.

War-time experience has demonstrated again and again that well-designed incentive systems do cut unit costs. A recent War Production Board survey of such plans showed that in a group of radio and radar plants, production was increased on the average by 51%; among laundries, 30%; and foundries, 35% over past performance; while in all cases, unit cost declined substantially. These figures indicate clearly that incentive pay can crack the present price-wage bottleneck in civilian goods, just as it cracked labor-shortage bottlenecks in war production.

In setting up a new incentive plan, supervisory personnel need not be excluded. In fact, many plants find that in the current shrinkage in employment, they must change their entire administrative set-up.

Now, with smaller staffs, they are encumbered with an overhead cost far out of proportion to their probable revenues. A cut in wages in the upper brackets will probably mean loss of key executives who are vitally needed in reconversion. A downward readjustment of these salaries may be quite acceptable, however, if coupled with an incentive pay plan which enables these men to share in increased productivity and reduced operating costs.

Many manufacturers fear that to broach the subject of an incentive plan will precipitate difficulties where a labor union is involved. Local unions, however, are inclined to view such proposals realistically.

A plan that provides a fair opportunity for workers to benefit along with the management will not necessarily bring union objections; on the contrary, it may prove a welcome formula to solve impending controversy. By all means, consult your union and enlist its support when setting up incentive wage standards.

Whether or not a union is involved, a poll of your employees probably will reveal that the change to a shorter work-week would not be unwelcome if, through an incentive system, weekly take-home pay could be maintained at a fair economic level.

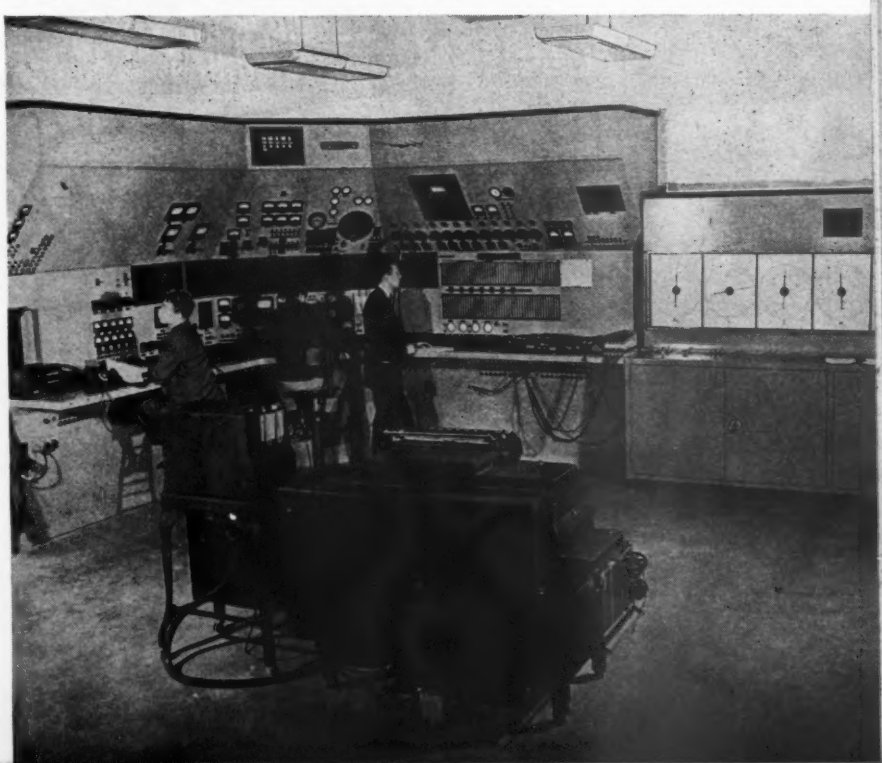
Some smaller plants have shown a tendency to let their war-born incentive plans go out with the employees released on V-J Day. The fact is that an incentive system can be applied to plants of all sizes, and can be made equally effective with fewer workers.

Incentive plans should be "reconverted" along with other plant operations. Weaknesses should be sought out and corrected, for many systems hastily put into operation during war-time were not well engineered. Reconversion gives a perfect opportunity to re-survey the plan and convert any features that failed to operate properly.

It should be emphasized that in all cases, time studies should be made immediately as part of the original plans for projected production—no matter how far distant the time of entering the market may be. Unless costs can be estimated with more than casual accuracy, marketing plans may go sadly askew.

Now is the time to adopt a production plan that will stabilize unit costs, while providing opportunity for workers to share in improved production methods. A long-range point of view here will avoid many future headaches. Be sure that the ultimate goal is a long range stabilization of unit costs, not immediate or temporary economies.

• Nerve center for Southern California Cooperative Wind Tunnel at Pasadena, operated by Caltech and jointly owned by Consolidated, Douglas, Lockheed, and North American. Scene shows master control room, where all operations are directed and controlled.



Tons Of Steel Are Like Ounces Of Feathers—To A Giant Magnet

AMONG the multitude of materials handling devices that have come into use since the industrial revolution really got under way lifting magnets have always been called upon to handle the heaviest jobs.

Nearly everyone is familiar with the sight of magnets transporting heavy loads of scrap iron and steel. Whoever has visited one of the better junk yards has seen that. Not so familiar, however, are some of the other uses to which lifting magnets have been put in industry.

These uses include the transportation of virtually any iron or steel object that can't be lifted, moved and set down in some other place by more economical means. The list of objects is long. It ranges from steel rails and billets to the most tangled mass of scrap.

Nor is the use of the magnets in the movement of materials confined to the usual conditions found in most plants. One of the most severe tests to which magnets have been put is that of being doused hundreds of times a day in a steaming pit from which it lifts out hot cropped ends lopped off from steel shapes. Regardless of the terrific heat to which the magnet is subjected it nonetheless transports its steaming load to the desired spot and dumps it.

On the other end of the scale, magnets are now and have been for some time, used for the purpose of under water salvage. In this application they are simply lowered to the bottom of the river or bay where the object lies that is to be removed. Once the magnet is in place the power is turned on, the order to raise is given and up comes the magnet with its load.

For such a multiplicity of tasks a variety of magnets such as those designed by the Cutler-Hammer Company, have been utilized. Though the standard circular magnet is satisfactory for a large number of purposes, magnets of other shapes prove more effective in certain jobs.

In the job of lifting steel rails out of freight cars for example, specially designed magnets, modifications of the standard rectangular type are used. Usually two magnets working on a spreader bar are required for the satisfactory handling of rails. Operated together from one controller, the two easily lift rails of any commercial size or weight, and either hot or cold.

One interesting use for magnets has been developed in laying rails on Western railroads. A magnet operator engaged in spotting rails for a crew busy repairing the road,

• By means of this powerful circular magnet at Columbia Steel's plant at Pittsburg, California, it is a simple matter to pick up a few tons of steel, carry them to the desired spot and drop the load with all the care used by a fond mother in putting a baby in a crib.

swung his magnet with its load of eight rails out over the side of the tracks. As the crane car moved along the track the operator tripped the magnet switch at rail length intervals.

Each time he tripped the switch one of the rails fell off as the strength in the magnetic field decreased sufficiently to permit the dropping of a one rail weight. Thus the task of the rail replacement crew was cut by the amount of work required to transport each rail from the eight-rail pile to the part of the track where it was to be installed.

In plants where they can be assigned to the task of regularly handling a type of material such as plates, bar stock, sheet bars or pipes, rectangular magnets that are commonly sold in four sizes are employed.

Magnetic Separation

But the actual lifting and transporting of materials is by no means the only use to which magnets are put for materials handling purposes. Fully as important though not so dramatic in its application is the use of magnetic force for the separation of materials.

Broadly speaking this use is divided into two main divisions: the separation of magnetic foreign bodies from a prime substance, and the separation of a prime substance capable of being magnetized, from other less desirable substances.

At this point it would be well to remark that iron and steel are not the only substances that can be magnetized. The list of ores and minerals capable of being magnetized is long. As a result the applications of magnetism for separation purposes are extremely varied, so much so that some firms such as the Dings Magnetic Separator Company of Milwaukee have set up well equipped laboratories for the purpose of furnishing complete magnetic analyses to industries faced with separation problems.

RELATIVE MAGNETIC ATTRACTIVE FORCE OF VARIOUS MINERALS

Material	Attractive Force Iron—100
Iron	100.
Magnetite	40.18
Franklinite	35.38
Ilmenite	24.70
Pyrrhotite	6.69
Biotite	3.2
Siderite	1.82
Hematite	1.32
Zircon	1.01
Limonite	.84
Corundum	.83
Pyrolusite	.71
Manganite	.52
Calamine	.51
Garnet	.40
Quartz	.37
Rutile	.37
Cerussite	.30
Cerargyrite	.28
Argentite	.27
Orpiment	.24
Pyrite	.23
Sphalerite	.23
Molybdenite	.23
Dolomite	.22
Bornite	.22
Apatite	.21
Willemite	.21
Tetrahedrite	.21
Talc	.15
Arsenopyrite	.15
Magnesite	.15
Chalcopyrite	.14
Gypsum	.12
Fluorite	.11
Zincite	.10
Celestite	.10
Cinnabar	.10
Chalcocite	.09
Cuprite	.08
Smithsonite	.07
Orthoclase	.05
Stibnite	.05
Cryolite	.05
Enargite	.05
Senarmontite	.05
Galena	.04
Niccolite	.04
Calcite	.03
Witherite	.02

Two Methods Used

The method by which magnetic force is exerted for the purpose of separating substances divides itself into two main classifications. One is that of the magnetic pulleys and pulley type separators; the other is the drum type separator.

The magnetic pulley type separator is a self-contained unit consisting of a magnetic pulley, idler pulley, endless belt, frame and accessories. As the substance from which the separation is to be made passes through the field of magnetic force those objects that become magnetized adhere to the belt while the balance of the substance passes on to be transferred to another conveyor. In the meantime, the magnetized material as it passes out of the magnetic field falls off the belt at a point where it cannot become mixed with the original substance.

The magnetic drum type separators require no conveyor belts and hence may be used where only a limited amount of space is available. Magnetic windings of the stationary magnet within the drum, and which extend half way around the drum, exert a powerful force on the magnetic material, until it passes out of the magnetic field as the drum revolves. As it leaves the field, of course, the material is discharged into a chute or bin and conveyed elsewhere.

For the separation of weakly magnetized materials special machines are required. Use of these is most frequently encountered in the concentration and purification of ores and minerals. Of these separator machines the most powerful type is an induction machine that combines the forces of both magnetism and gravitation to accomplish the separation.

Minerals that have been successfully separated on a commercial basis by machines of this type are listed on an accompanying table that shows the magnetic attractive force of various minerals in relation to iron.

To sum up. While the application of magnetic force as an aid to industry in the tremendous task of handling materials is already great, it is safe to say that still further developments will take place in the next few years.

Artist Turns Genius To Inventions For Army

Some artists may be impractical and overly idealistic, but to Edward E. M. Joff, sculptor and painter who came from Czarist Russia, neither of these adjectives would apply. At the San Francisco Port of Embarkation the mere suggestion that they would could invoke only a smile of derision.

Reason why is that Joff, since October, 1944 a special adviser to the Director of Repair at the California Quartermaster Repair Depot, has contributed a steady flow of practical inventions which the Army has put to an immediate and advantageous use.

Among the inventions that Joff has contributed since joining the Army's civilian services in 1942 are such devices as these: a messkit repairing machine that tripled production with one third the labor force; a tool that takes apart in one movement the unwieldy hinge on a tent shelter pole; a machine for removing dents in steel helmets with a single blow from a pestle curved to follow the line of the helmet; a press to replace cork gaskets in canteen screw-tops, and a mechanical rotary drum for cleaning GI tableware.

• Sculptor Joff explains invention to Captain C. F. Heritage at Fort Mason, Calif.

In reply to a question as to what principles of art he had used in making these inventions, Joff stated that it was all a result of his knowledge and observation of the tensile strength and reactions of metals under given conditions. Such knowledge, he averred, is essential to any sculptor who is to be successful, and Joff is at least as good a sculptor as he is an inventor.

Blast Cleaning Undergoes Revolutionary Changes

A TWO-FOLD revolution is well under way in that part of the maintenance world known to the laity under the misnomer of "sand blasting."

While invention of the Vacu-Blaster, a machine that directs an abrasive blast of steel grit onto a surface to be cleaned and picks up both the grit and dirt to separate them in one continuous operation, marks the biggest advance in blast cleaning machinery in at least two decades, fully as extraordinary an advance has likewise taken place in the development of abrasives.

That step consists of the use as abrasives of such unexpected things as clover seed, toasted cracked wheat and ground walnut shells.

Reason for the invasion of agricultural products into the field where sand, steel grit, and crushed stone were supreme lay in the need of automotive and aircraft maintenance men for an abrasive substance that would remove the encrustations from motor cylinder walls without actually scoring the metal itself.

At McClellan Field in Sacramento need for such an abrasive was felt to be so acute that the problem of finding one was turned over to a small research staff there which soon came up with the announcement that clover seed, directed by an air blast against motor cylinder walls, would have the desired effect.

Though the proposed solution seemed rather staggering, it was promptly tried with outstanding results. News of the experiment quickly spread throughout maintenance shops across the country. As a consequence the demand for clover seed rose so rapidly that for a short while the market was cornered nationally.

For a time, indeed, it seemed as if the four leaf clover might go the way of the wild pigeon and the dodo bird. But before things could come to such an unhappy pass other maintenance men discovered that toasted cracked wheat was so successful that it even had the edge on clover seed. Soon after that Southern Californians, casting about for a way in which walnut shells might be put to use in furtherance of the war effort, found that the shells, crushed and properly treated did a still better job.

While this ferment of experiment was going on the great firm of E. I. DuPont De Nemours and Co. decided to enter the picture. Whether they were prompted to it by the threat to the four leaf clover doesn't matter. In any event they soon came out with a plastic ball which did the job when blasted onto the cylinder walls.

But though the plastic balls did serve the purpose, maintenance men, veering from one new abrasive to the other, began to settle their preferences on the agricultural products. The skyrocketed price of clover kept it out of the market, but since both the toasted cracked wheat and the crushed walnut shells seemed to preserve their abrasive efficiency longer than the plastic balls of the Delaware firm, and their price remained satisfactory, agriculture continued to get a break.

That, of course, is not necessarily permanent. Already a new technique for cleaning interior cylinder walls is developing with the use of a liquid jet that contains an abrasive substance. Though still comparatively untried, indications are that the technique will have an advantage through a greater ease of recovery of the abrasive which can then be reused.

MAINTENANCE is one of the most effective methods of insuring a profit. It is a balance wheel that keeps the plant operating smoothly, efficiently and economically, and saves the high cost of emergency repairs. The accompanying material is part of a series of editorial features dealing with maintenance in its varying forms and aspects.

• One man easily handles the Vacu-Blaster which is fast revolutionizing blast cleaning.

The Vacu-Blaster

Even more extraordinary than the adaptation of toasted cracked wheat as an abrasive to take advantage of its cutting edges is the revolution in design of machines for blast cleaning that has been brought about through the invention of the Vacu-Blaster.

Originated by the engineering staff of The Mead Company in San Francisco and manufactured by the Vacu-Blast Company, the new device is merely pushed at a moderate pace over the surface to be cleaned. It is a bell-like arrangement, so light in construction that it can be moved easily with one hand. As it moves, a blast of steel grit is blown through a cone in the center of the bell onto the dirty surface. The particles of grit are directed at the surface at such angles that almost instantly the surface is cleaned under the blast. At the same time suction, caused by a vacuum pump operating through a pick-up cone that encloses the blast cone draws the blasted dirt, grit and air up through the bell and into another part of the machine where the grit is separated to go back into the bag from which it is picked up by the blast to be used again.

It sounds simple and it really is, so much so that it is almost impossible to realize how such a natural development could have bothered the blast cleaning industry for the past quarter century, defying every effort to solve it until The Mead Company of San Francisco tackled the problem.

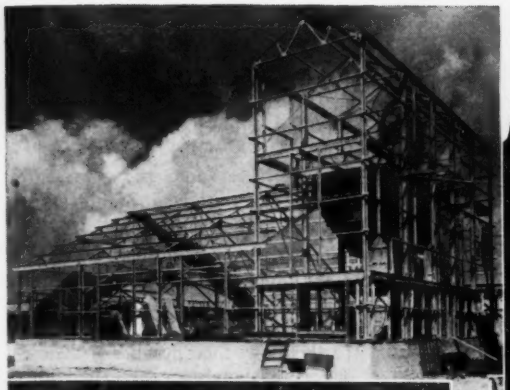
Advantages of the machine are many. Most obvious is the fact that through its use there is no cleaning up of dust and abrasive after the job is done. Not only is the machine easily handled, but the operator doesn't have to wear the heavy, specially designed clothing and the artificially ventilated hood that is imperative in any other kind of blast cleaning.

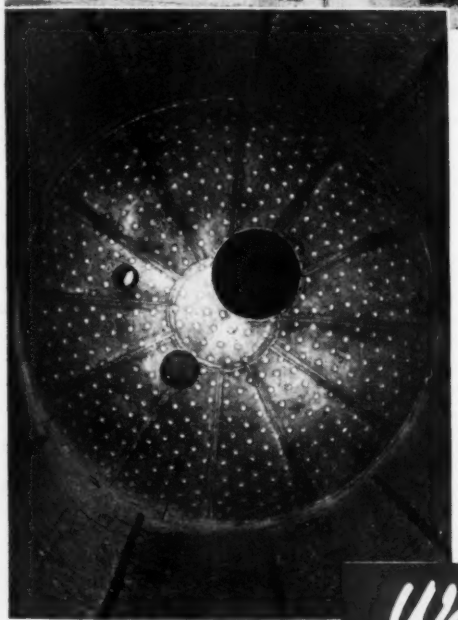
Too, the danger of developing silicosis by the operator is non-existent because all dust and particles of matter go directly into the bag through the vacuum pipe.

Since approximately 60 per cent of the cost of blasting done in the conventional way is chargeable to the handling of the abrasive to and from the job and in clean-up, it is evident that this part of the cost is entirely eliminated.

In addition to these factors is yet another. The bare metal after cleaning is free from dust deposits, a condition that has not been true of other methods of blasting, as in sand, for example, after the use of which a silica dust deposit is found. This freedom from dust makes possible the immediate application of paint to the cleaned surface even while the blasting is taking place on adjacent areas.

STEEL CONSTRUCTION MEN *who know how!*





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Wages, Prices Become The Terrible Twins

By ARNOLD KRUCKMAN

WASHINGTON, D. C.—Lew Schwellenbach of the Pacific Northwest, whom we know here as Mr. Secretary of the Department of Labor, will be at the center of one of the five or six top news sources of the nation in the next three or four months.

Critical as the situation looks even in October, many of us here are led by our labor unionist friends to believe that the present status bears the same relation to what may come, as the "phoney" war period in Europe bore to the later conflict. The labor unions suggest that somewhere between 4,000,000 and 5,000,000 workers may be on strike early in 1946, the greatest labor paralysis in the history of the United States.

In September, union groups filed in Washington with Government the required notice of the intent to strike to the extent of 307 prospective walk-outs. Even more are anticipated in October. Many, of course, are minor and local; but the aggregate numbers, scattered all over the country, rather stun one.

More Strikes Due

By November there will probably be nation-wide strikes of workers in textiles, lumber, steel, rubber, tobacco, coal, oil, phone communications, railroad workers, automotive workers, and various groups of white collar salaried technical workers. The Westinghouse salaried people are out to the number of 38,000 in one of the most complete and skilfully organized strikes in history.

Unions are puzzled and slightly worried because white collar workers apparently are following a sort of grass roots impulse which leads them to organize on their own initiative, the urge apparently being genuinely spontaneous, coming from some ferment within themselves. The action seems to spring from an awakening to the fact that they belong neither to the present classification of management nor to labor.

From what their spokesmen say it appears that they think they have hitherto been caught between management and organized labor, and have been badly squeezed in the strike process. This instinctive drift to group coalition is important to you people on the West Slope because you have a higher i.q. average of salaried workers, with more solid intellectual foundations, than any other region of the United States.

This reporter thinks this swift unionization of salaried, supervisory and technical and professional employees, is the most broadly meaningful upthrust of the time. Most of these people have the disciplines of special training, and usually are slow to coalesce. They are basically individualists. They range the universe in talk, but have the same fundamental conservatism in action that is characteristic of the smaller business man.

Stimson Praised

The Labor-Management Conference, arranged here by Schwellenbach and Henry Wallace, with Truman in the background, is scheduled to start on November 5. It is very probable that Henry F. Stimson, the former Secretary of War, will be the chairman. There is literally no other man now in public life who is so highly respected for integrity, intellect, warm human sympathy, erudition, high principles, calm balance, vast wisdom, and a rare quality of high courage and courtesy which we associate with our concept of a gentleman. Mr. Stimson is past 79, yet is mentally quick, vigorous, and strong. He is an amazing gentleman.

Schwellenbach and Wallace will sit in the Conference as representatives of the Government, but will not vote. There are to be 38 delegates, industry and business to be represented by nine each from the U. S. Chamber of Commerce and from the National Association of Manufacturers. Eric Johnston, another Pacific Northwesterner, from Washington State, will head the U. S. Chamber of Commerce delegation. Johnston is expected to leave his mark on the Conference.

Labor will be represented by eight delegates each from the American Federation of Labor and from the Committee for Industrial Organizations. The Railroad Brotherhoods and the United Mine Workers each will have one delegate. The whole Conference almost blew up before it got started because some incredibly stupid member of the Government organizing committee literally forgot to invite John L. Lewis. You may fume and splutter when you see the name of Lewis, but if you know your labor activities you will realize that no labor history can be made in this country without Lewis.

Lewis is the biggest, strongest, and most patriotic labor leader in America. He is a great man, an honest man, and one of the greatest leaders of our time. Even when we, here, utterly differ with Lewis we never question his integrity, his genius, and his unshakeable devotion to American democracy. It is a bad mistake to underestimate him.

It is clear the conferees come solely from Big Labor and from Bigger Business. There are increasing signs that the grass roots salaried workers' organizations may combine with some smaller business groups, (both being independent and great in number), and demand representation. The conference is expected to last from four to six weeks, and may be what Eric Johnston calls a "continuous procedure," meaning it may recess and reconvene repeatedly, probably staying alive during the whole period of the strikes. It seems certain to have an effect upon the strikes; and it appears that eventually the independent salaried workers' unions and the smaller business groups may force their way into the conference. It seems another mistake of judgment to have left them out.

The smaller business angle also has a special interest to the Pacific slope. There are so many smaller business organizations scattered around the country that no one actually knows their number or their value. Congress is bombarded by their appeals, many of which palpably emanate from crudely incompetent racketeers. Anything as much in public discussion as smaller business is bound to attract the grifters.

Small Business

But the National Federation of Small Business, Inc., with headquarters in San Mateo, Calif., for a year past has increasingly registered on the Hill. The driving force is C. W. Harder, who lives in San Mateo. The Federation has a legal representative in Washington, Daniel M. Narodick. The Federation sends to all Members of Congress a document which Members of Congress frequently refer to as its Ballot.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

and which the Federation calls the Mandate. It apparently is a periodical summation of what smaller business people think about legislation pending in Congress.

In effect it is a poll of opinion of the specific group. Some members of Congress take it seriously and are keenly interested. The poll appears to reflect the opinions of smaller business people in all parts of the country. The Federation claims 150,000 members. It is known to be making a canvassing drive for members. No one here knows very much about Mr. Harder, nor about other officials of the Federation outside of the Capital.

The manner in which the Federation, or Mr. Harder, has increasingly aroused the interest of the Hill has prompted members of Congress from various States to become interested in the Federation and Mr. Harder. Some of us from the West have been asked the questions that are natural under the circumstances. We sincerely wish we knew more about it. Particularly, since organized Smaller Business may be important in the Labor-Management Conference.

The conference is expected to evolve a formula to enable Labor and Management to settle its problems by conference and negotiation. This formula is intended to provide the machinery to take over the work that must be done when the National War Labor Board goes out of existence in December. We all have more than a strong hunch that the conference also must provide the formula by which industry will be able to increase prices when it is forced to raise wages.

Price Increases

Neither Secretary Schwellenbach nor President Truman, nor their advisors, believe business is entitled to price increases. The White House insists increases can be absorbed in profits. They state that the elimination of overtime has saved manufacturing costs 5.5 per cent; and that elimination of upgrading and fringe increases has cut away another 4.5 per cent. They regard this as proof that a 11 per cent wage increase could be absorbed without any effort by industry; and if business has to add still more to its costs, the volume of business and profit margins that may be anticipated are considered so large that business can readily and properly be squeezed for any wage increase.

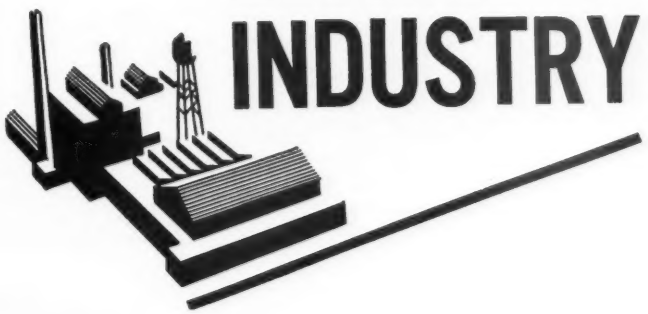
Moreover, people on the White House side of the argument will point out that when excess profit taxes are removed—expected before the end of this session—it means industry and business will add $11,000,000,000 to its take home earnings. The Labor people already have served notice they will require a slice of the profit margins when the excess-profits tax is wiped out. Mr. Schwellenbach thinks we know about as much as we need to know about speeding up production and that we now must learn more and do more about speeding up consumption. This, of course, is consistent with the general CIO program.

In Government many officials believe industry invited the strikes with the idea that industry could afford them because industry had piled up all the profits this year it could take home. This line of thought holds that industry expected the strikes to continue until next March, say, when unemployment compensation would have expired, workers would be hungry, and three or four millions veterans would be out of uniform, looking for jobs. Industry said things like this rather loudly and frequently in its various conferences and meetings, here; but industry, regrettably, does not seem to have made an over-all organized program.

The unions, on the other hand, proceed according to plan along premeditated lines. There seems little doubt most of the Government people sympathize with them. Certainly Schwellenbach gave them a break when he arranged that arbitration of oil wages did not start from the basis of the wages as they were when the strike started, but began adjustment on the basis of the 15 per cent increase which the operators in principle accepted. In other words, Schwellenbach's arbitrators start with a 15 per cent

(Continued on Page 66)

LOANS TO INDUSTRY



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KRUCKMAN *(Cont'd from Page 65)*

increase as the basing point, and will determine how much the workers shall get beyond the 15 per cent increase, up to possibly 30 per cent. It is generally held here that 20 per cent is the least they will get, and that the increase determined may be as high as 25 per cent.

The Schwellenbach formula is considered unique and clever. It is expected to be adopted as the general formula for settlement of all wage increase claims. The whole development, to date, in Washington is regarded as a decisive victory for the unions. The industrial crowd here is rather upset about it, and inclined to be jittery. Chief insecurity in the unions' prospect is the feeling reported to exist between Sidney Hillman and Philip Murray of CIO. The bitterness is expected to be a serious danger in CIO affairs. John L. Lewis, who, presumably, can go back into the AF of L whenever he wishes, is said to have no particular antipathy for Bill Green; but Lewis makes no secret of his dislike for Murray and Hillman, and Murray does not hide his distaste for Truman.

Closed Shop Tabu

Government will try to avoid wage discussions at the conference. The closed-shop, and compulsory arbitration, also are tabu. CIO would like to talk about working conditions, vacations, living conditions, and similar issues, but the subject is not on the agenda. NAM wishes to bring up the Wagner Act, and its modification; and would like to go into a detailed discussion of collective bargaining, and veterans' priorities, but Government frowns on it.

Bill Green of AF of L seems certain another no-strike pledge will be requested. Mr. Schwellenbach appears to think the major object of the meetings will be accomplished if the unions and the employers agree to negotiations, succeeded by voluntary submission to conciliation, mediation, and arbitration; but when an issue is submitted to arbitration, the parties to the issue should be compelled to accept the judgment they invite.

Labor Court

The Administration ideas are incorporated in S 1419, introduced by Senator Brien McMahon of Connecticut. His bill would create a U. S. Board of Arbitration, in effect a Labor Court, appointed with the consent of the Senate. The Ball-Hatch-Burton bill, which would revise the Smith-Connally Act, and make arbitration compulsory, does not appear to have much chance of enactment.

Early in December Mr. Schwellenbach has called a meeting in Washington of State labor officials and others from the Pacific Northwest to consider the establishment of a full and independent Federal Regional Labor Department headquarters at Seattle. The Northwestern states now must go to San Francisco with problems.

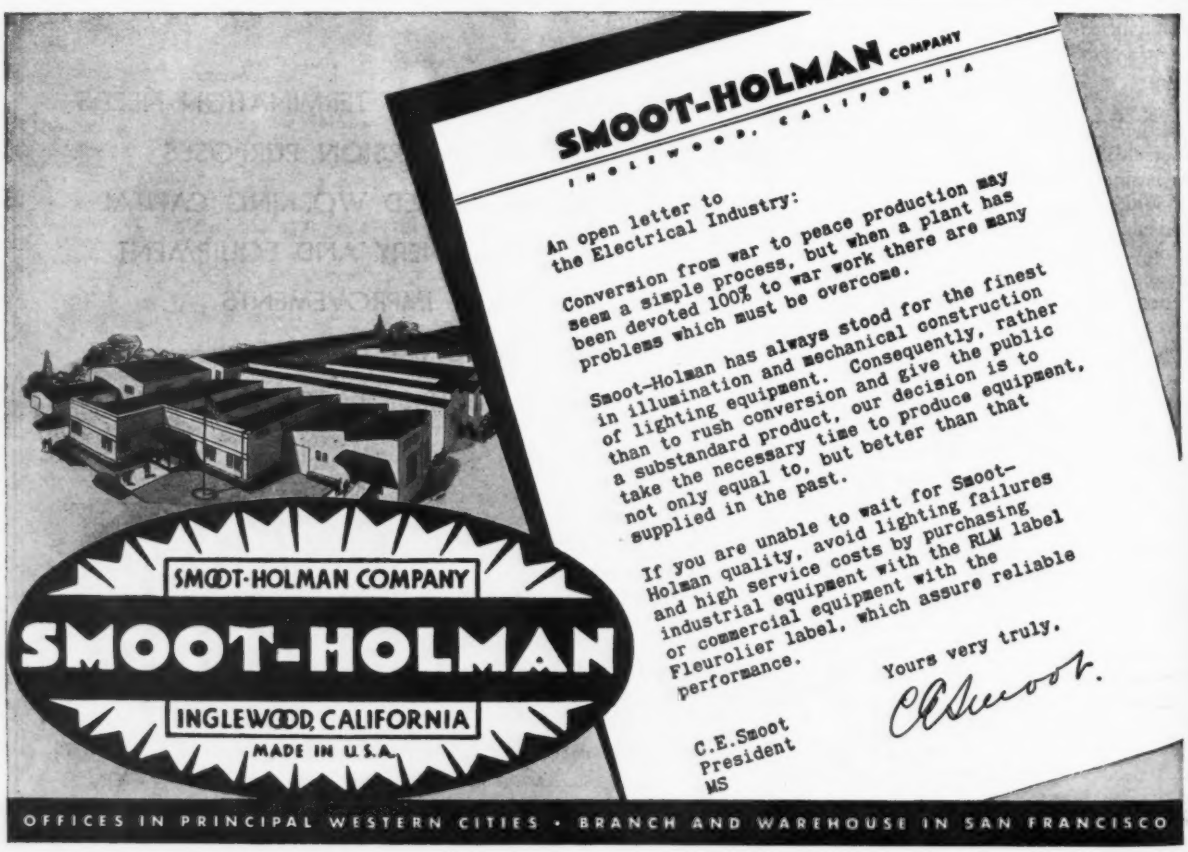
Foreign Trade Zone

Seattle expects soon to justify its appeal to obtain a foreign trade zone which will greatly enhance the prestige and world trade of the port of Seattle. Governor Walgren, Christy Thomas, manager of the Seattle Chamber of Commerce, and president of the Western States Council, and other leading citizens of the Northwest, have been in and out of Washington frequently the past month in the interest of these projects.

Kenneth Norris, of Los Angeles, chairman of the steel committee of the Western States Council, slipped into the Capital late in September, and had a visit with the President, and the officials of the RFC, to discuss the plans for the operation of the steel plants at Geneva, Utah, and Fontana, California. The President expressed his warm interest in the destiny of the West Slope, but naturally made no commitments.

Kaiser and Eaton

About the same time, Mr. Kaiser brought Cyrus Eaton, the Cleveland investment banker, to meet with the Congressional delegation of California, Oregon, and Washington. Kaiser asked their support in his effort to secure a revision of RFC terms for the acquisition of the Fontana plant. The present RFC terms do not place him in the same position as competitors who have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been able to write off certain war costs and charges. Eaton agreed to finance the Kaiser plan, conditional upon the RFC revision. The California delegation will place the Kaiser-Eaton plan before the President and ask him to intercede with RFC. Kaiser is said to have reported that he was not consulted before the RFC announced its onerous terms.

Congressman Clyde Doyle, of California, has written the President asking that he clarify his proclamation, placing the submerged continental shelf under Federal jurisdiction 10 to 100 miles beyond the lip of the shore line of the United States, pending further legislation. The President accompanied his proclamation with an Executive Order, placing the control of the areas under the direction of the Secretary of the Interior. It is assumed the proceeding was inspired by Ickes in order that he might block the effort of Congress to quit-claim offshore submerged tidal oil lands to the States. The quit-claim legislation was enacted by the House with a large majority. Western supporters of the quit-claim measure hope the President will disavow any purpose to deprive the States of submerged offshore oil lands.

Florida Competition

For the past eight months upwards of two hundred retail stores in the Capital have been selling an orange juice, highly popular, which is made from a frozen concentrate shipped from Clearwater, Florida. Present capacity of the producer is entirely absorbed by the distributors in Washington. The juice is concentrated, frozen and shipped in blocks of ice. The ice-concentrate is made ready for sale simply by taking one part of the ice-concentrate and mixing it with three parts of water. The mixture has the necessary rich orange color, has the flavor of fresh orange juice, and no vitamins are lost. The economy of the frozen-concentrate is obvious. General Electric supposedly has devised a small household refrigerator to preserve the ice-concentrate, and similar fruit-concentrates. Department of Agriculture experts forecast the ice-concentrate will revolutionize the industry based on orange juice. It is expected the processing machinery will soon be placed in orange-growing centers everywhere.

Californians, Arizonians, and others in the Pacific West will also be interested to know that the Department of Commerce, through its Industrial Projects Unit of the Bureau of Foreign and Domestic Commerce, is decidedly exploiting Florida as a new industrial state. Attention is drawn to its vast unused land, to its cattle and dairy industries, to the naval stores pines, and to its production of tung oil. Commercial development of cork-oak plantations, the conversion of the usually waste palmetto into plastics materials, and the production of ramie on a large scale are discussed at length. Florida's citrus fruit industry lately has perfected a pure orange juice powder which can be made into a drink equal in flavor to the natural juice in the proportion of 2½ ounces of powder to two glasses of liquid.

The state itself, furthermore, is carrying on research into numerous commercial products made of citrus materials. Vegetable canning, packing, and processing, especially dehydrating, has apparently developed in a large way, as has the growing and processing of sugarcane, and the production of starch from a special type of sweet potato. There also is big business in non-metallic minerals, and in production of ceramics and glass.

West Has Only 6 Airports of Entry

Airports in the eleven western states designated as airports of entry by the Bureau of Customs of the Treasury Department, Washington, D. C. number six of the total of 36 permanent airports of entry in the nation, Alaska and Puerto Rico.

Those in the eleven western states are at: Douglas, Arizona; Nogales, Arizona; San Diego, California; Port Townsend, Washington and two at Seattle, Washington.

Designated as temporary airports of entry are: Havre, Montana and Spokane, Washington.

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WESTERNERS AT WORK...

R. F. Fuller Al Bodie T. A. Bedford

California

T. A. Bedford named assistant general manager of the four Kaiser Richmond shipyards reporting to Edgar F. Kaiser. Succeeds **Clay Bedford** who becomes vice-president and director of Kaiser-Frazier Corporation, Detroit. . . . **Col. Al Bodie** appointed vice-president and works manager, Otto K. Olesen Company, Hollywood. . . . **Lt. Richard F. Fuller,** returned pilot who escaped through German lines aided by Dutch underground, in charge of research and design for Craftsman's Guild, Los Angeles. . . .

James M. Hait upped to chief engineer, Food Machinery Corporation, San Jose, succeeding **A. R. Thompson,** retired . . . **William DeBack,** new manager of Anderson-Barngrover division, replacing **F. L. Burrell,** retired. . . . **Art Nay** now general manager of Santa Fe Trailways' Western Lines, Los Angeles, succeeding **Gene Allen,** resigned.

E. P. (Slip) Madigan, hitherto special consultant of Smaller War Plants Corporation, boosted to regional director. . . . **Dudley M. Steele,** ex-manager of Lockheed Air Terminal, and **Robert Fenton Craig,** head of commercial aviation University of Southern California, are airport consultants for Trumpis & Collar. . . . **F. L. Holser,** new executive vice-president for Interstate Aircraft & Engineering Corporation, Los Angeles; **L. A. Kavanaugh** now secretary-treasurer. . . .

Edward I'Anson, formerly vice-president and general manager of Menasco, heads Kinney Iron Works, Inc., Los Angeles. . . . **Dr. Charles A. Dobbel,** associate professor of mining engineering at Stanford, goes to National University of Venezuela, Caracas, as technical adviser and visiting professor of geology. . . .

L. E. Neel, general manager Turlock Co-operative Growers, Modesto, elected president Canners League of California to fill term of **Fred M. Drew,** resigned. . . . **J. Harold Merrick,** elected vice-president Rheem Manufacturing Company, is president of Brazil subsidiary of company. . . .

James V. Winkler, new development engineer for magnesium on West Coast for Dow Chemical Company, at Los Angeles. American Institute of Steel Construction, Inc., with **Walter T. Norris,** district engineer, in charge, opens office at 1260 Russ Building, San Francisco 4, Calif. . . .

James H. Turner succeeds **Edward G. Cahill** as manager of San Francisco Public Utilities. . . . **Albert E. Baak** new executive director controls division, Paul Henry Company, Los Angeles. . . . **Charles F. B. Roeth,** deputy state manpower director, upped to state director when **Sam Kagel** resigned. . . . **Kenneth H. Campbell,** manager San Francisco C. of C.'s world trade department, appointed manager Foreign Commerce Department of U. S. Chamber. . . .

Expected executive set-up for new Hunt Foods, Inc., merger: **Norton Simon,** chairman of board; **M. E. Wangenheim,** president; and **Frederick R. Weisman,** exec. vice-president. . . . **Mac Short,** vice-pres., Lockheed Aircraft, appointed to SAE technical board to supervise all technical committee activities. . . . Paraffine Companies Inc., have raised **J. E. Holbrook** and **R. R. Marsh** to vice-presidencies. . . . **Chas. E. Moore,** president Joshua Hendy Iron Works, on visit to army posts in Pacific as member tripartite commission appointed by War Department to discuss labor-management problems. . . . New officers California Metal Trades Assn.: president, **L. W. Delhi,** v p., Western Pipe & Steel; vice-pres., **A. E. McIntyre,** gen. mgr., Merco-Nordstrom; treas., **Geo. F. Bont,** pres., Calif. Steel Products; secretary, **Max F. Lowe.**

Andrew G. Haley, resigns office of president and director, Aerojet Engineering Corp., Pasadena, to resume law practice. . . . **John W. Anderson,** chief engineer of diesel engines at American Locomotive, now executive engineer of Atlas Imperial Diesel Engine Co. . . .

George H. Prudden works manager of new Lockheed Aircraft division. . . . **Walter L. Eggert,** Emeryville, elected vice-president Comptrollers Institute of America. . . .

Willard S. Briscoe replaces **M. D. Salisbury** as head of Bethlehem Steel Company's publications division, West Coast. Salisbury returns to Bethlehem, Pa., as head catalog writer. **Gordon H. Dent** named assistant to Briscoe.

Colorado

L. J. Van Horn promoted to assistant manager of Denver branch Ford Motor Company.

Idaho

John D. Bradley of Boise, elected president of Idaho Mining Association, succeeding **A. H. Burroughs.**

Montana

E. W. Newman, district engineer U. S. Bureau of Mines in Montana, resigned to go with American Smelter & Refining Co., Salt Lake City.

New Mexico

Edward G. Robertson, erstwhile War Production Board consultant given post as Federal Housing Administrator, New Mexico district.

Wm. DeBack Wm. Allen

Oregon

James R. Geddes, San Francisco, new production manager for Fowler Manufacturing Company, Portland. . . . New appointments at Jantzen Knitting Mills in Portland include: **Ralph Wescott,** production manager; **Mrs. Edna Beamer,** charge of materials and supplies; **H. N. Shea,** factory superintendent of knitwear; **Harry Dalton,** factory superintendent of sportswear, and **Lt. Col. G. Robert Dodson,** assistant manager of sweater division. . . .

Walter O. Simon, plant manager Hanford atomic bomb project, transferred to Du Pont company's home office at Wilmington, Del. Succeeded by **Dr. B. H. Mackey,** former assistant manager. . . . **Max W. Bennett,** secretary-manager of Coast Fuel corporation, now general manager of Coos Bay production activities of the company.

Utah

Eric W. Ryberg resigns as executive vice-president Utah-Idaho Sugar Company to devote time to duties as president and general manager Utah Sand & Gravel Co.

Washington

William M. Allen of the law firm of Holman, Sprague & Allen, for 14 years a Boeing director, elected president of Boeing Airplane and Boeing Aircraft Companies, filling vacancy created by the death of **Philip C. Johnson.** . . . **Anna McDonnell,** first woman ever made assistant vice-president of Pacific Telephone and Telegraph Company, Washington-Idaho area, at Seattle. . . . **John Cormode** resigns

• Northern California Labor-Management Committee, USES, responsible for wartime success in the redistribution of war workers.

The committee provided advisory counsel and assistance in controls and regulations needed to staff top priority war industries.

Left to right, standing: Paul Schnur, Labor; Ray Wiser, Management; Paul St. Sure, Management; Charles Real, Labor; E. Russell Lutz, Management; Sam Kagel, former USES director; W. H. Oliver, Management; L. M. Erickson, Labor.

Seated: Daniel Del Carlo, Labor; John O'Connell, Labor; William Storie, Management; C. E. Brinsdon, Management; Wesley Howell, Management; Al Wynn, Labor; Paul Heide, Labor; Wakefield Baker, Management; Carl Brandt, Labor.

---

from Lake Washington shipyards to become president of Far East Steamship Company. . . . **Ernest R. Walton** appointed manager of Square D Company's assembly plant at Seattle succeeding **Walter H. Bodle** now assistant to merchandise sales manager, Detroit. . . .

Kenneth W. Brown, personnel director, Lake Washington Shipyards, now manager of aviation department, Seattle Chamber of Commerce. . . . **Niles M. Anderson,** mill manager St. Regis Paper Co., Tacoma, given charge Marathon Paper Mills, 15 million dollar project at Peninsula, Ont. . . . **C. L. McPhail** promoted to assistant manager Weyerhaeuser Timber Company operations, Longview.

Thomas J. Kennedy, upped to manager Pacific Paperboard Co., Longview. . . . **Edwin C. Matthias,** Seattle, succeeds **F. G. Dorety,** as vice-president and general counsel of Great Northern Railway, St. Paul, Minn. Matthias was general attorney for railroad in Seattle. . . . **A. L. Janes,** assistant general counsel of Great Northern retires Nov. 1. . . .

Edward H. Savage, West Seattle real estate man and port commissioner, elected president of board of Port of Seattle, succeeding **John A. Earley** now secretary. Other officers are: **Horace P. Chapman,** vice-president, and **Col. W. C. Bickford,** general manager and chief engineer.

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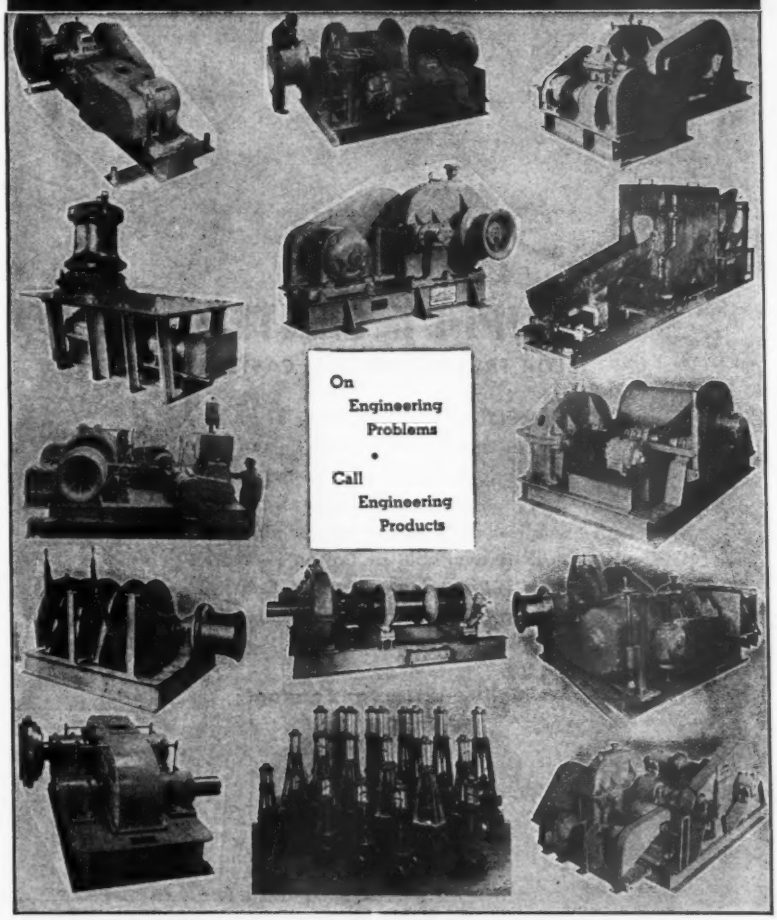

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REGIONAL REVIEWS

OLYMPICS TO THE COUER D'ALENES

AFTER a slight startled hesitancy due to the unexpected suddenness of the reconversion starting gun, Washington State industry is off the starting blocks and swinging into its stride. It is just entering the first turn in the first lap, with a long way to go.

There is careful jockeying for a favorable position without sacrificing reserve energies which will be more decisively needed later. Most of the runners recognize the numerous factors which favor—and those which restrain—their successful efforts in this obstacle race of industrial development. Many of these factors are common and their review at this time may be beneficial.

Plus Factors

The existence of many elements which are essential to industrial development is becoming more apparent daily. Most essential of all is the fact that the *desire and intent to progress* seem to be the motivating force in the majority of industrial managers. This is being expressed through their actions, with little previous talk; and it indicates the extent to which they have developed careful plans for reconversion and postwar production.

One of the many typical illustrations of this point is the Lindeman Power Equipment Company in Yakima. This organization will have a postwar operation 300 per cent greater in terms of labor than before the war. It is engaged in the manufacture of hop picking machines, tractors, beet digging and topping machines and potato digging machines, illustrative of the advanced technology to be applied to farm machinery during the coming era.

In addition, the basic *ability to progress* is becoming more apparent, this ability being composed of both the existing knowledge where it is available and the seeking for that knowledge where it is not already at hand.

Reconversion Speedy

Such ability is shown by the speed with which many plants have already completed the reconversion of their facilities. In the Spokane area, reconversion disturbed the industrial picture but briefly, and most of the workers whose jobs disappeared at the termination of war contracts are now engaged in peacetime employment.

This same condition has been noted in Yakima, where long established firms (until recently engaged in war production) have converted almost overnight. These firms are engaged in the production of agricultural, spray and warehouse equipment, manufacturing of which has suffered during the war years. In Tacoma, where reconversion on the whole was a minor problem, employment has increased in most plants as more manpower has become available; and many firms are still short of men.

Another indication of the ability to progress is found in the attention being paid to available markets. This includes those markets which exist both as immediate pent-up demand and as long-range wants. It also includes those markets which can be created by applying new technical developments and by utilizing the potential values of market research and advertising.

Food Industry Developments

Examples are abundant and are typified by developments in the food industry. In Yakima the Starr Fruit Products Company has recently completed a new plant for the freezing of fruits and vegetables. The Moffatt Company at Grandview in the Yakima Valley has greatly enlarged its commercial freezing facilities.

Other firms planning substantial programs in this field are General Foods, Birdseye (Snider Division), and California Packing Corporation. Puyallup reports good prospects for even more work opportunities to result from current experimentation with winter food processing (pork and

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beans, etc.) which will help to level out prewar fluctuation in labor requirements due to seasonal operations.

Similarly the forest products industry looks forward with confidence to a long period of optimum production due to the shortage of building materials, both structurally and for furnishings. Besides food preparation plants, chemicals and metal factories around Tacoma are operating at capacity, with the railroad shops and the Tacoma smelter having urgent need for more men.

Some firms not as yet fully under way on postwar goods, are showing a sincere desire to diminish the effects of the long anticipated "change-over depression." For example, in Spokane the Columbia Electric and Manufacturing Company is keeping its crew together by making mail boxes of scrap aluminum as an interim project, not big—perhaps—but very significant.

Also illustrating progressive ability by management is its increasing recognition of the necessity for good product design; for effective, competitive methods in production and distribution, for vocational education and training to increase the skills of employees; and for good labor relations. A symbolic trend is seen with respect to this last item wherein some plant managers are almost accomplishing miracles by aggressively seeking and gaining the assistance of the labor unions which represent their employees.

Minus Factors

Of course not all is rosy, even though the majority of the clouds have silver linings. Some things place definite restraints on industrial development. Apparently the most common of these at the moment is the shortage of materials and manpower for construction. This applies equally well to industrial, residential and commercial building.

Spokane alone has a six and a half million dollar building program for repair of school buildings and a sewage disposal plant just waiting for the availability of materials. Yakima reports that plans and specifications are already drawn for over twenty million dollars worth of private development and expansion in the county, which likewise must await materials and manpower. Previously mentioned plans of expanding food processors in Yakima are being delayed by this shortage, as are similar plans throughout the state.

Another shortage is in the raw materials and manpower for the manufacture of the finished products themselves. This is directly related to the problems of pricing controls on new products. Additional hesitancy also occurs in awaiting clearly stated policies as well as specific actions looking toward tax reduction and the disposal of surplus properties. For example, not only Spokane but industry throughout the state is anxiously anticipating quick and satisfactory disposal of the Northwest's three DPC-owned light metals plants; because it is sincerely believed that their private operation will attract many satellite industries.

However crucial and irritating these factors seem at the moment, they are not expected to be of maximum importance in the long-range future of our industrial steeplechase. The real enemies are dangerous in many ways, but especially due to the subversive manner in which they operate.

The stooges for Enemy Number One are those undecided individuals whose most aggressive expression is, "Better safe than sorry." They are not negative but rather merely neutral, having the static attitude that the unsettled conditions of the moment indicate the need for extreme caution and for just holding what they have. *The real enemy appears most subversively in active opposition to development in the form of shortsighted attempts to prevent competition.*

Balancing Up

Having the opportunity to view all of the activities from which the above few items are sifted, we would say that the balance between good and bad can be expressed best in one word: *America!*

As part of the Pacific Northwest, Washington State is truly representative of frontier America in its abundant resources, its expanding markets, its rapidly rising purchasing power and standard of living, and its research and development in science, economics, and social relationships, all of which are fertile fields for modern pioneers. The whole story of development in America apparently is being re-lived here—compressed in time and space!

FTC Checks Basing Point Pricing Zones

The Federal Trade Commission is reported to be checking for zone violators of basing point pricing practices recently prohibited by a Supreme Court decision, according to indications from Washington, D. C.

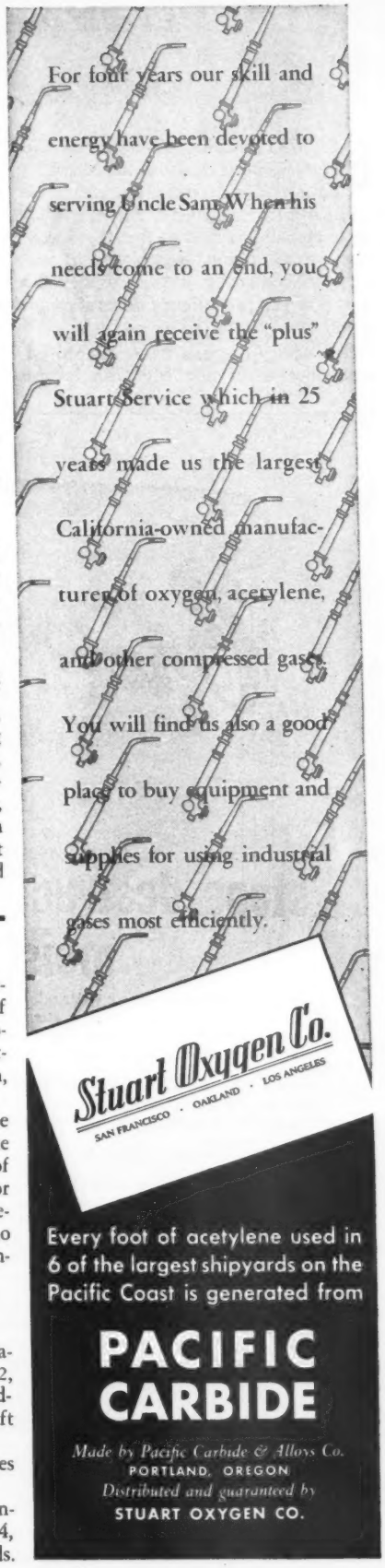
Measures are also being taken by the commission against those seeking to make it difficult for newcomers in any field of industry or commerce to obtain materials or equipment. Renewed attention is also being given by the commission to those who cut prices as a means of underselling competitors unfairly.

Coast Produces 78,554 War Planes of Nation's 273,554

Number of warplanes produced in Pacific Coast plants since January 1, 1942, up to August 1, 1945, total 78,554, according to an announcement by the Aircraft War Production Council recently.

Of this figure California companies turned out 70,741 planes.

Production throughout the entire country during the same period was 273,554, amounting to over 2,633,963,000 pounds.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REGIONAL REVIEWS

SIERRAS TO THE SEA

PROMPT clearing up of Army and Navy contract claims in the Northern California area constitutes a remarkable record in such settlements, due in considerable measure to the fact that there were comparatively few sub-contractors, in contrast to Southern California, where the aircraft contracts continued down through several tiers of subs.

The Pacific Coast as a whole has proved to be about 50 per cent better than the rest of the country in making its settlements, but this is reported to be due to the fact that the area is not so heavily industrialized and the problem consequently much simpler.

Contractors are all getting into civilian operations without many settlement problems; in fact the Government sent out a civilian representative of the Contract Settlement Board along with Army and Navy officers and only had one contractor show up at a meeting in San Francisco held to discuss controversial matters. All the others were satisfied with the situation.

Good Financial Shape

From V-J Day to early in October, 1201 notices of contract termination were mailed out, and 645 of them were settled by means of no-cost settlement agreements, waivers of claims being signed. Claims were being filed by 356 contractors against the Navy, but 85 per cent of these were all prepared and submitted for payment by Oct. 15, and by Dec. 15 it is expected the remainder will be all in and ready for payment.

This situation is vastly different from the last war, when there was no provision for writing off losses on contracts and claims were still unsettled several years later.

Contractors on World War II work were reported to be in good financial shape almost without exception, and very few required any financial assistance from the Army or Navy.

Housing Problem

Apparently the most serious industrial problem in the Northern California area at present is the lack of suitable housing for the type of industrial worker needed to fill the manpower shortage. This is not a matter of providing temporary accommodations. Shipyards in the East Bay section have living quarters being vacated in their housing projects, but the need is for low-cost permanent homes that will attract the better class of industrial labor.

Unless some solution is reached in the near future, fears are expressed that industrial operations will be slowed down considerably for lack of desirable men. One of the difficulties in attacking the problem is the absence of information about builders. Meanwhile people are spending their money at a lively rate and industry is hoping that they will still have some of it left by the time the housing becomes available.

Surveys are being taken by chambers of commerce to ascertain the amount of industrial and warehouse space available and the likelihood of any releases from the armed services. It is hoped that this will eliminate the danger of industries canceling their expansion plans because of a mistaken belief that space is not to be had.

The information is also needed as a guide for builders, who have no way of gauging the demand nor the supply. But even in spite of the present brisk demand, many builders are hesitant to go ahead for fear that the Army, Navy or some other government organizations will release so much space as to make new construction unprofitable. Some officers in the armed services take a cooperative attitude, but are unable to forecast what the Government

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will do, while other officers seem very indifferent to civilian needs.

OPA Troubles

Regional OPA officials are developing a much more cooperative spirit with industry and are beginning to realize in some measure that private industry can't blandly kiss off losses as the Government can. But there are still plenty of these officials who seem incapable of understanding a manufacturer's situation. For example, one meeting of OPA officials and industrialists broke up when a woman representative of OPA became violently insistent that a chiffonier with a mirror should be priced on the basis of a chiffonier without the mirror.

At the end of the first postwar month in the San Francisco Bay Area there were 27,118 more job opportunities than takers, and in San Francisco 12,284. At the same time the unemployment insurance claims in the Bay Area amounted to only 14,888 or 1.9 per cent of the total gainfully employed, while in San Francisco it was just 1 per cent or 3,783 persons.

The special U. S. Census of San Francisco's population has been certified by the Director of the Census at 827,400 as of September 1945. This represents an increase of nearly 200,000 above the 1940 April 1st count of 634,536 and advanced it from twelfth place to probably tenth among the national contenders.

Boeing Announces New Transport Plans

With ton-mile direct operating costs estimated at from 10 to 12 cents, preliminary specifications for a 20-passenger transport, primarily intended for feeder line work, have been announced by Boeing engineers. The new plane is to be known as Model 417.

At the same time announcement was also made of the Model 431 transport which will carry from 30 to 40 passengers and which is intended for operation on domestic airlines. Operating costs for the 431 are estimated to be the same as for the 417. Both planes are of the twin engine type. Cruising ranges for each exceed 1000 miles.

Portland Plane Parts Plant Goes Out of Business

Columbia Aircraft Industries, a company that produced over $20,000,000 worth of plane parts in Portland during the war, is to be dissolved, according to an announcement by Guy R. Harper, its president.

On the same day it was announced that an option owned by the company on a building belonging to Food Machinery Corporation had been sold to the Goodwill Industries. The machinery used by the firm is being sold to approximately 15 firms who have bid on it.

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Many industrial concerns find that many lifting and carrying jobs can be handled faster, more economically and safer with rubber-tired Mobilcranes and Supercranes. These one-man operated, one-engine powered cranes are fast and maneuverable . . . may be safely operated in close quarters . . . eliminate tracks and special roadways. In making plans for improved plant efficiency, you'll be interested in learning what the Osgood Mobilcrane and General Supercrance can do for you in modern materials handling.

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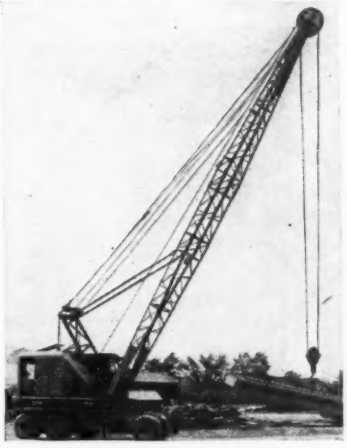
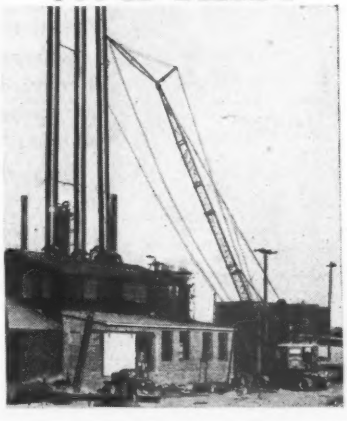


. . . or THIS?

IF YOU DO, you can save time, money and manpower with an OSGOOD MOBILCRANE or a GENERAL SUPERCRANE



ONE-MAN CONTROLLED • ONE-ENGINE OPERATED • RUBBER-TIRED

THE OSGOOD CO. MOBILCRANES — THE GENERAL EXCAVATOR CO. SUPERCRANES

MARION, OHIO

REGIONAL REVIEWS
TEHACHEPI TO TIJUANA

DEFINITE reversal of employment trends has taken place in Southern California. Week by week, mass lay-offs have dwindled, and so has the filing of new unemployment compensation claims. Mid-September saw new hires begin to spurt as a long-awaited back-to-work movement got under way.

Regardless of the spreading strike fever, it was apparent that many overdue fishing trips had been taken and ex-war workers were buckling down to serious job seeking. About 133,000 had been laid off by war industry. Of these, perhaps 5,000 have been called back again to their old jobs, and an undetermined number have left the state. In early October, USES listed some 53,000 job openings, three-fourths of them for men. Manpower officials pointed out, however, that this figure should be multiplied by a substantial factor because:

(1) During the war, USES had sidetracked requests from the retail and service trades industries in favor of high-priority war orders and entirely discontinued its placement of domestic help;

(2) Orders filed with USES never have represented more than a substantial fraction of total employment openings in the area, since many employers and labor unions acted as direct referral agencies; and

(3) Lifting of manpower controls left all employers free to return to gate hiring, recruiting through advertising, and other traditional methods.

It is safe to say that were complete figures available, the 111,000 unemployment compensation claims on file could be balanced by an equal number of job openings in various occupations.

Employment Reconversion Complicated

Many industrialists still profess surprise at this paradox of widespread "unemployment" when there are probably more jobs than jobless. It must be remembered that mass reconversion of workers is just as complicated as mass reconversion of machines. Conversion of war-time skills to civilian production offers knotty problems.

When a large aircraft firm lays off 50 women, skilled in operating the tool cribs supplying certain production lines, this would seem a bonanza for automotive firms that are crying for parts clerks. But a girl who has learned to identify 50 or 100 types of specialized aircraft tools is of little immediate use to a company whose stock catalogue lists 40,000 items.

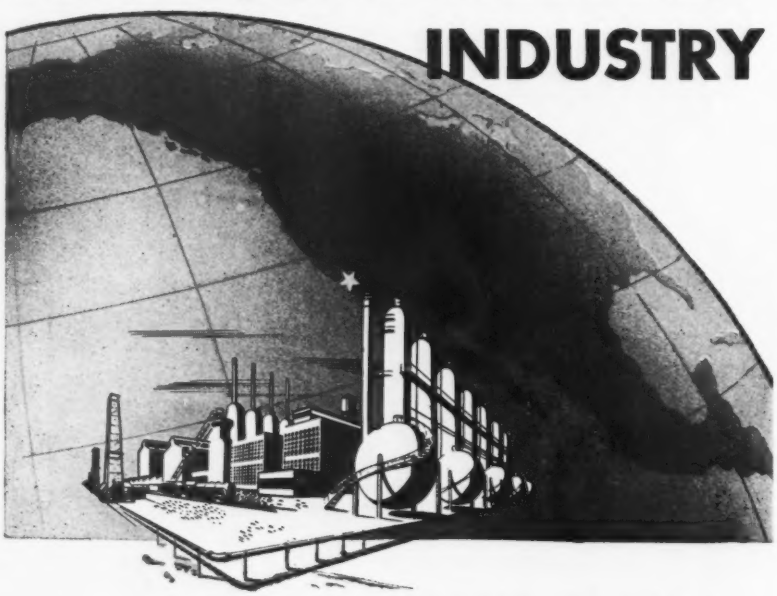
Many thousands of former war workers have been absorbed by retail trade and service industries, but wage differentials and less attractive working conditions make this process slow. Large employers are re-instituting training programs exactly parallel to those hurriedly set up to create new skills for war.

Domestic Service Unappealing

Gone from Los Angeles and San Diego streets are the "body snatchers" who used to lure the loiterer with offers of good-paying jobs in war industry. Employers now want to be sure that new employees meet peacetime standards. Workers hesitate at low 40-hour take-home pay, based on civilian hourly rates; employers are loath to undertake to train inexperienced persons who may not be satisfied, anyway.

U. S. Employment Service offices at Los Angeles have reopened their long-closed domestic help division and report they could place hundreds of women in household jobs. So far, there are few takers, demand being chiefly for the day-work jobs, a dollar per hour or more for cleaning and laundering. Even these rates do not appear to create serious competition for industrial employers, since the jobs lack glamour and the prestige of production work. Family women don't want to live away from home and are not attracted even by rates ranging

MAAS Serves WESTERN INDUSTRY



THE HISTORY of A. R. Maas Chemical Co. is one of enterprise, stability and service. Year after year it has paced Western industry with improvement of method and facilities—developing uniformity and utility of product.

Today the A. R. Maas Company continues to search for better ways to serve all industry, so that—war or peace—its products will have the perfection that modern production methods demand.

Write Today for Technical Catalogue

We are proud of our Army-Navy "E" flag with its star—an honor awarded us "for continued outstanding production of war materials."

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SOUTH GATE, CALIFORNIA

"ARMed for Chemical Service"

upward from $150 per month for housemaids and $250 plus room and board—and often the use of the family car—for couples.

While Southern California employers continued to eye demands for wartime take-home pay with peace-time working hours, 81 per cent of a typical group surveyed by the Merchants and Manufacturers Association had reduced their work-week, most of them to 40 hours.

Foretaste of further "share the work" tendencies was action of 3000 members of the CIO United Rubber Workers at the Firestone plant in Los Angeles in voting to return to their pre-war 6-hour, 5-day-week schedule, although the industry was trying to recruit several thousand workers in the hope of trebling local output of civilian tires.

Construction Situation

Ominous clouds on the lumber horizon have failed to hold back an almost irresistible movement toward long-deferred expansion of retail facilities. Increase in Southern California population has not been matched by comparable expansion of stores, theatres, and other service facilities.

Long badgered by threats of increased rentals and unprotected by rent ceilings, business men prefer to build, rather than submit to extortionate demands. Innumerable small shop buildings are springing up along the boulevards. Already on their way are million-dollar additions by the May Company and Sears Roebuck at Los Angeles and Glendale.

The prefabricated theater is about to make its debut. Sale is reported of two prefabricated theaters of the "stadium" type, to be produced at Kaiser's mill at Fontana for erection in Long Beach and Vallejo. Estimated cost is said to be 40 per cent less than for the conventional type.

Despite nearly empty lumber yards, enough work got under way during September to bring Los Angeles city building permits above nine million dollars, up 25 per cent over August and thrice the September, 1944, total. Marking a sharp reversal of trend, it was the first time 1944 totals had been surpassed.

Still seeking to break bottlenecks, WPB has been surveying the brick and tile industry in the hope of boosting production of these key materials, particularly common brick and sewer pipe. Price ceilings, low wages, and hauling costs, all play a part. The situation is not helped by a disastrous fire at the Pomona Tile Company's plant, producer of much tile needed in home construction.

Sales Problems

Activity in the growing field of manufacturers' agents will face a shortage of office space which is a problem for all new firms as well as many older ones who face eviction at lease's end. WPB officials predict great need for agents able to negotiate outlets for merchandise throughout the West.

The typical new manufacturer, ready to start mass production, discovers that while he may sell a large block of his production to a single department store, this volume won't be enough to maintain profitable operation. He must find outlets in Portland, in Seattle, in Reno and Boise. A manufacturers' agent able to handle a dozen or more lines can meet this need economically.

Many inquiries are reaching WPB from firms planning to set up sales organizations for their new products. With production now far enough along to set definite delivery schedules, the almost forgotten profession of salesman hasn't yet emerged from the doldrums because too many firms have backlogs of orders so large that for months they will need order fillers, not salesmen.

Post-V-J Day financial headaches appear slow in developing, thanks to four main factors:

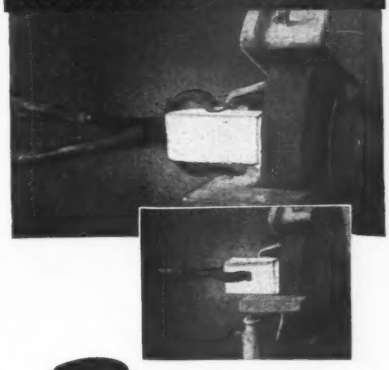
1. Ample reserves set up by most firms.
2. Proper pre-termination planning by management and the armed services.
3. Abruptness of the V-J shock, putting almost everyone on about the same footing.
4. Willingness of workers to take a prolonged "vacation" while management got ready to rehire them, making it easy to cut down on payroll overhead during the readjustment period. It might be added that the companies which had failed to lay their pre-termination groundwork, as frequently urged in *Western Industry*, were also the ones who were caught flatfooted without a reconversion plan, hence no need for interim financing. They had no program, nothing ready to produce.

Financial Aspect

Pessimists regarding the West's industrial future might ponder well the anxiety displayed by Eastern industry concerning prospective local competition in the market here. Swiftness of Eastern interests to recognize and act upon this knowledge should be an object lesson to local pessimists who have been slow to appreciate the opportunities under their own noses.

Not so slow to grasp the situation are local banking interests, who are prepared to give outside financiers a stiff run for their money in the present loose-money competition for investment outlets. Southern California bankers admittedly are somewhat cautious about extensive lines of credit to new and inexperienced firms, and as one official put it, "would prefer to have a loan secured by some good, A-1 accounts receivable"—yet they turn away no inquiry until thoroughly satisfied they can offer no help. When a national financing firm prepared recently to launch a vigorous campaign for the business of financing automobile dealers' floor stocks at new low rates, a Western banking chain reportedly wired a still more attractive offer to every dealer in its territory.

BRICKSEAL
REFRACTORY COATING



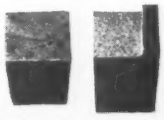
Resists

ABRASION

PROTECTION against abrasion is an outstanding advantage of Brickseal. Here are two refractory bricks, one coated with Brickseal, the other uncoated. They were heated to more than 2000°, taken directly from the furnace and shoved against an emery wheel. Hot and cold, the Brickseal-treated brick resisted the abrasion – see below.

Brickseal consists of high fusion clays and metal oxides combined in oil. Furnace heat burns away the oils and vitrifies the clays and metals which penetrate deeply into the pores, cracks and joints. Brickseal prevents cracking, spalling and slagging regardless of sudden temperature changes. Brickseal is also a mortar for laying up refractory walls.

Compare the Brickseal-treated brick at the left to the untreated at the right.



TRY IT YOURSELF
on your emery wheel

Two bricks bonded together and partially coated with Brickseal will be mailed to you on request.

BRICKSEAL
REFRACTORY COATING
5800 So. Hoover St., Los Angeles, Calif.
1029 Clinton St., Hoboken, New Jersey

REGIONAL REVIEWS
COLUMBIA EMPIRE

THE reshuffling of workers from war to peace jobs has been considerably slowed by the September-October lumber strike which tied up most of the Northwest's largest peacetime industry.

Lumbering, logging, and allied industries can take another 20,000 workers, about the number of shipyard employees expected to be laid off between now and the first of the year.

Oregon's shipyard and aircraft employees numbered nearly 100,000 at their peak, 65,000 at war's end; under 30,000 two months after final victory.

War Workers Outward Bound

The state's postwar planning department has given an insight into what is happening to many of these displaced workers. A survey of shipyard workers nearly two years ago showed 35,720 were planning to buy or build a home in Portland. It seems now that the plans were just wishful thinking or to please the census taker as less than 10 per cent are expected now to follow through.

They are going "home" in droves, to the Middle West, to their upstate Oregon farm and small community and even back to the East Coast where the unemployment situation is reported much worse.

It would seem that the forecast of Oregon's leading manufacturers, speaking through Columbia Empire Industries, Inc., a month ago, hit the nail on the head when they said they would be able to absorb most of the unemployed who left war jobs but wanted to stay here. Very few tears are being shed over the current exodus.

More Kaiser Ships?

Heralding the end of an era, Kaiser's Swan Island yard in Portland launched its last tanker late in October, three years to the week from the first launching of the 153 tankers that will have been produced at the yard. Mrs. Henry J. Kaiser will be the last of a long list of Swan Island tanker sponsors and champaign bottle breakers.

The Oregon delegation in Congress has received a warm blast from the Portland Metal Trades Council protesting apparent Navy intention to center future ship repair work in Navy yards rather than spreading it through private yards to keep them on a skeleton basis at least for a few more months. The Navy already has closed its civilian personnel office at Portland, issuing shortly afterward a bright commendation to Portland shipyard workers for going through the war without a single work stoppage.

Kaiser Company has been listed low bidder for six French ships for their Swan Island yard at Portland. If the contract becomes final, it will give concrete proof to the Kaiser statement that they "want to do something" about keeping the yards operating into the postwar era.

Tackle Tax Problem

Oregon is going to "go to town" on its tax problems with an eye to attract more industry to the state through favorable taxation. That, at least, is the official word given by the Oregon tax study commission authorized by the 1945 legislature and now operating under a full head of steam.

A director of research, S. J. Barrick, will lead that phase of the program to be presented to the next session of the legislature a year from this winter.

It may *not* be that Oregon's tax system is keeping industry out of the state as charged, the study commission indicated, "and we intend to find out if this is true and, if it is, do something about it."

The "industry scaring" Oregon tax is labeled as such by those who just want a sales tax enacted—"it really isn't doing anything but give industry a fair shake," is one of the current opinions on the other side of the fence from the tax changers.

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CORRUGATED AND
FLAT TRANSITE
for Industrial Buildings
Marine Engineering & Supply Co. engineers recommend Corrugated and Flat Transite for Industrial Buildings because:
It is almost indestructible.
It can't burn, can't rust, can't rot.
It is quickly and easily installed, requires no maintenance and is 100% salvageable.
For complete details about the use of this modern construction material, write for FREE 80-page illustrated Bulletin.
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EVERYTHING IN INSULATION

Lumber Moves South

Highly significant is the announced intention of the West Coast Lumbermen's Association, representing what is now among the largest lumber production group in terms of board feet in the world, to move its offices from Seattle to Portland during 1946.

The move was called because of the shift during recent years of production and number of mills from the cut-over lands of Washington to the large stands of virgin timber in Oregon. It is not true, as some writers have indicated, that the State of Washington is now cut out of timber.

The industry feels that in Washington it will be able to continue its present curtailed production for many years to come as production is rapidly falling to the rate at which new trees are grown in the state's vast timberlands.

The same will ultimately be true in Oregon, industrial experts have agreed. But Oregon producers still have more of the virgin forests to include in their sustained yield and tree farming programs, thus allowing larger annual cutting.

The new executive vice-president of the association, Harold (Hal) V. Simpson, is an Oregon man who represented the association in Washington, D. C., during the war and unraveled many of the highly complicated knots of wartime controls.

He replaces the famous Col. W. B. Greeley who, although officially retired, will be retained in much more than an emeritus position because of his vast experience. The "colonel," as he is known throughout the nation, has been a widely-known and accepted authority ever since the first World War when he commanded all of Uncle Sam's lumber division forces in France, later becoming Chief Forester of the United States.

Lumbermen Prepare For Hangar Construction

In preparation for a huge postwar extension of civil aviation involving the construction of thousands of small airports and airparks—classified as small airports of the first or second class by the C. A. A. —timber fabricators of the Pacific Northwest, along with 23,000 retail lumber dealers throughout the country, are preparing for a tremendous program of hangar construction.

The plans provide for construction of small fabricated packaged, all-wood hangars as well as stock models of the larger conventional variety.

In addition to this the lumber industry is also getting ready to obtain its share of construction of "aerotels" for airports, auto servicing facilities, restaurants, club-houses, bowling alleys and day nurseries, to name only a few of the facilities that are expected to spring up around the rapidly expanding business of flying.

Conveyco SYSTEMS

REDUCE COSTS...INCREASE PRODUCTION

ONLY CONVEYOR SYSTEMS can hold the cost down and increase efficiency to make the modern food processing industry profitable. There is no place for lift-and-carry methods in this low margin business just as there is no place for old-fashioned material handling in your plant. Right now, it should be made ready for its highest efficiency with a modern Conveyco System.

The Conveyor Company, with a background of 25 years engineering and constructing automatic movement and processing systems, has built plants for handling steel, glass, cement, stone, food, fish, oil, grain and many other products.

It's logical to call the Conveyor Company where there is always a complete stock of all types of conveyor equipment and a large staff of competent engineers. Call or write today!

THE CONVEYOR CO.

ENGINEERS • MANUFACTURERS

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CONVEYCO
EQUIPMENT FOR
• VEGETABLE PACKING
• CONSTRUCTION
• CONVEYING
• OIL FIELDS

REGIONAL REVIEWS

THE WASATCH FRONT

GENEVA steel plant is now in a position where not even a Congressman can be optimistic about its future.

Emissaries from this area who have been in Washington, D. C., and New York seeking to bring about a rapproachment between governmental disposal agencies and the United States Steel Corporation have returned with these definite impressions:

1. That U. S. Steel will not come back into the picture on a leasing or conditional transfer proposition, or any other disposal plan which would involve the corporation in any kind of business partnership with the government.

2. That the corporation, if it can be interested again in the property, would consider nothing but an outright purchase with no strings attached.

3. That even this possibility will evaporate as the corporation moves into an alternate plan of expansion on the Pacific Coast.

4. That there is no government policy with respect to disposal of surplus war plants of this type and that precious little progress is being made toward the formulation of a policy.

5. That Colorado Fuel & Iron Corporation's informal (by letter) offer to operate the plant on a profit sharing basis providing the government puts in another $70,000,000 for finishing facilities is not being seriously considered by the disposal agencies.

6. That no offers are now in sight that will be seriously considered.

7. That the whole problem is in for a prolonged "shaking down" process before a long-term solution can now be expected.

The plant is still operating at about one-third capacity on navy orders which will be filled by mid-October. After that the process of cutting personnel and closing units preparatory to a shut-down will get under way. No closing date has been fixed however. The last instruction from RFC to the operating company was to continue operations until further notice.

Local steel men say that the shutdown, when it comes, is not likely to be complete. One blast furnace will have to be kept in operation through the winter to protect the coke ovens. The ovens are heated by waste blast furnace gas and this cannot be replaced by commercial natural gas coming into the area. In fact, the only gas distributor in the area recently filed a new schedule of charges designed to eliminate much of its present industrial business.

A crew of 400 to 500 men would be required to keep one blast furnace in operation and take care of necessary maintenance work.

Kalunite Future

The DPC financed alumina-from-alunite plant which is still being operated by Kalunite, Inc. (an Olin Industries subsidiary) is another surplus war plant in which this area is deeply interested. Scheduled to be put up for disposal in the near future, there is little hope that it will attract a bidder for the purpose for which it was constructed. But part of the facilities, it is believed, could be readily converted to the production of phosphate fertilizer. A local group has reportedly approached RFC with a view of obtaining the plant for that purpose on a leasing basis.

Resin from Coal

Two experimental operations are currently under way in Utah which may open up a new outlet for Utah coal. The objective is to find a commercially feasible process for separating fossil resin from the coal.

One plant of 100 tons capacity per day, using a "sink and float" process has been

NOW *ANYONE* CAN GRIND THREADING TOOLS! —WITH MASTER GRINDING GAUGE!

Until the advent of the Acro Master Grinding Gauge, only a skilled mechanic could grind thread-cutting tools to the required degree of accuracy. Now anyone can do it—in less time, with less waste, with even greater precision!

The cutting tool is simply placed in slot of the Master Grinding Gauge, and thumb screws hold it tightly in place, at the proper angle, while being ground on any type of surface grinder! The Gauge is made of hardened tool steel. There are no delicate or moving parts to get out of order. Milled slots at top and bottom provide correct grinding angles. A small set screw at end, eliminates any lateral motion. There is nothing special to learn —anyone can use it!

Acro Master Grinding Gauge

Anyone can be "helped on the job" by Wrigley's Spearmint Gum, too, once this quality product again becomes available. Just now, no Wrigley's Spearmint Gum is being made, and until conditions permit its manufacture in quality and quantity for everyone, we again urge you, please, to "Remember the Wrigley's Spearmint wrapper." It is our pledge to you, of the finest quality and flavor in chewing gum—that *will* be back!

Remember this wrapper

You can get complete information from:
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Z-90

constructed at Huntington, Utah. Adriaan Naglevoort, chemist, who developed the process, reports that the resin recovery is about five per cent and that the value of the product is approximately ten times that of the coal from which it is extracted.

Combined Metal Reductions Co. has been working on the same problem in a converted ore processing plant at Bauer, Utah. Results of the experimental operations there have not been disclosed.

Some seams of Utah coal run exceptionally high in resin—so high in fact that it burns too rapidly to make a satisfactory fuel. The most resinous beds lie in a 70-mile-long area between Castle Gate in Carbon County, and Salina Canyon in Sevier County. Intermittent laboratory work on extraction of the resin has been carried on for years by various interests. A major difficulty has been to get a clean clear product, satisfactory for paint and varnish manufacturers, who are the chief market for the product. These are the first attempts to transfer the processes from the laboratory to a commercial basis.

Manpower Still Tight

The manpower supply continues tight in this area. Military establishments, metal mines, smelters, reconverting war plants and construction contractors all say they can use more men. Any unemployment is strictly voluntary or exists because the jobless individuals cannot find the wage rates to which they became accustomed during the war.

37,000 Planes Turned Out By Convair In War

Of the approximately 37,000 combat, training, liaison, and transport planes and equivalent spares turned out by the Consolidated Vultee Aircraft Corporation, nearly 700 Privateers were made at the company plant in San Diego, California.

The Privateers were four-engined Navy search bombers widely used throughout the Pacific theatre of the war.

Among the 37,000 planes of all types, 14,672 were multi-engine aircraft, including the four-engined Liberators and Coronados as well as the Privateers.

Southland Electrical Gadget Output To Soar

Production of electrical home appliances in Southern California is expected to boom during the coming months. Heading the boom will be an increase in output of fractional horsepower motors from a current 10,000 a month to about 67,500 a month early in 1946.

Though already a few vacuum cleaners are being produced in Southern California within a few months the list of electrical home appliances produced in the area should include large numbers of such things as kitchen mixers, circulating heaters, air conditioners and handirons.

Drastic reductions in wartime requirements for Westland Cold Drawn Steel make it possible to again resume prompt deliveries. You now can get Westland's *immediate attention* on your cold drawn steel bar requirements regardless of size, grade or shape. Westland is fully equipped and ready to supply highest quality carbon or alloy steel cold finished bars in any quantity.

Write, wire or call a Westland representative in any principal city for complete details.

Westland's new edition of Standard Classification of Extras with data on cold finished steel bars and shafting is now available. Write on business letterhead for your free copy.

MILL REPRESENTATIVES: SEATTLE . . . PORTLAND . . . SAN FRANCISCO . . . LOS ANGELES . . . *Dealers Everywhere*

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THE WEST'S *Only* COLD DRAWN STEEL BAR MILL

REGIONAL REVIEWS

CONTINENTAL DIVIDE

GAZING into the mirror like a man with a bad hangover, the Rocky Mountain region is looking at itself these days. What it sees is not too reassuring and yet there is something comforting in the discovery that the face in the mirror isn't a bad face, after all.

The tinge of worry in the minds of people in the mountain states comes from the sobering realization that this part of the West isn't a youngster any more. There are streaks of gray at the temples and it is time to take stock and make sure that the great goals charted so boldly a few years ago aren't just a lot of dream stuff.

Dr. Garnsey Puts It Straight

Among the many contributions to the discussion is one of particular timeliness by Dr. Morris E. Garnsey, an economist at the University of Colorado, who puts his analysis into an article in the October issue of *Harper's Magazine* under the title, "The Future of the Mountain States."

Pulling no punches, Dr. Garnsey hurries over the obvious facts about the wealth of natural resources in the mountain states and makes only a quick bow to the resourcefulness and vitality of today's "mountain men." What he has to say is mostly a warning hinged on the premise that the "economic climate" of the region is anything but healthy and tending to get worse rather than better.

In Dr. Garnsey's diagnosis, two symptoms are alarming. One is the old "curse" of absentee ownership, not excepting that of the Federal government, an absentee landlord owning some 275 million acres or nearly 50 per cent of the total area of the Rocky Mountain states. However, after an attempt to strike a balance to determine whether the Federal government is a good steward or a bad one, Dr. Garnsey lets the "bureaucrats" off with a relatively clean bill of health by comparison with the corporate absentee owners whom he considers exploiters of the West in the old-fashioned colonial style.

Most pungent of Dr. Garnsey's criticisms are those levelled at the region's own business, financial and industrial leadership. He thinks that what the region needs is more of Henry Kaiser and less of Denver's "Seventeenth Street Crowd," by which he indicates such men as Charles Boettcher.

The comparison seems an unfortunate one for Dr. Garnsey's thesis, since it is becoming apparent that the big-talking Kaiser already is bowing out of the region's industrial picture with no more permanent effect than that of any season's tourists. Boettcher's influence remains and grows in the region's beet sugar industry, cement plants, public utilities, transportation and so on. But many of Dr. Garnsey's complaints about the backwardness of the region's home-grown leadership will get approving nods from those well acquainted with the situation.

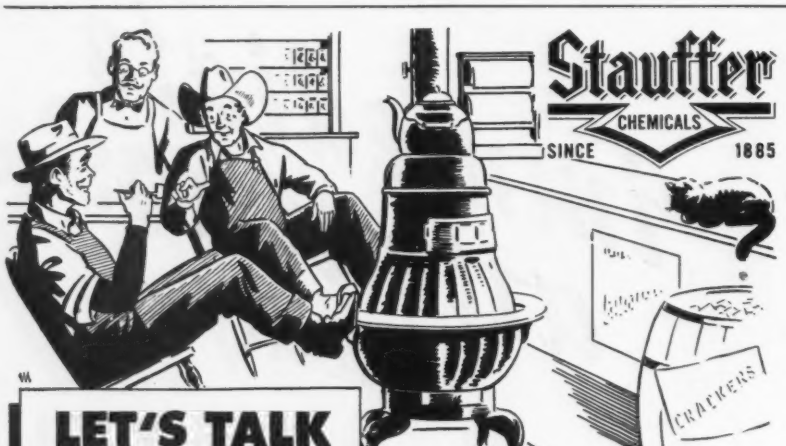
Tom Ferril's West

In a gentler mood but perhaps with more effect, Thomas Hornsby Ferril picks up the discussion in the same issue of Harper's. Ferril is advertising manager of the Great Western Sugar Company and one of the country's leading poets, a strange combination perhaps but in Ferril it produces brilliance balanced by uncommon common sense.

Here are some of Tom Ferril's views from the article mentioned:

"Even the most docile of us can be prodded into becoming rampant Westerners, with the West on both sleeves, by seaboard men of good will who study our behavior with deep thoughtfulness and finally conclude that our lives on this abject high-cost plateau are not economically justified unless we stick pretty close to the scenery-and-laundry business.

"What it boils down to is telling a good



LET'S TALK IT OVER!

Although the old pot-bellied stove around which the "boys" used to talk things over in the local store has disappeared, we can still get together with you to help solve your chemical supply problems.

Your welfare and prosperity are of great interest to us. We still like to function in much the same manner as the old village storekeeper who always enjoyed a close personalized touch and friendly relationship with his customers.

Whether you are a small business, a large industrial or in between—whether you have been in business many years or just starting—you can be sure of Stauffer's willingness and proven ability to perform a reliable service for you.

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many of us to get the hell out of here. It reminds me of talk I sometimes hear in Denver about the British: they're washed up, why don't they give the country back to the Druids and move to Canada, Australia or New Zealand so we won't have to keep bailing them out every 25 years? We Westerners are as stubborn as the British. We like being where we are. We'll lie, borrow, howl, cajole, and tell the truth to perpetuate our ways of life.

Still Going Strong

"Our population, I personally regret to say is increasing. Hundreds of thousands of soldiers want to come here to live. Reclamation and power mean more industries, more leaf-green, more meat. Every town wants to be a Pittsburgh. Denver, as I write has queried, '14,000 selected industrial executives' to lure their factories here. Already our sprawling war industries have invaded the foothills and you'll soon have to fly to Jackson's hole or the Grand Mesa to enjoy what was accessible 15 minutes from Denver.

"But for better or for worse, the Westerner is going to become more rampant, more articulate. He bristles and foams at hearing Thurman Arnold say that the Western states are being treated as 'colonies of the Mother Country—the industrial East,' which is now developing South American countries as 'colonies' also.

"From time to time I've clipped a few odds and ends from thoughtful scholars who'd like to kick us out of the Union. Here's one from the book collector, A. Edward Newton, in the *Atlantic Monthly* for May, 1932:

" 'I should like to say to the citizens of Wyoming, Utah, Nevada, Colorado, New Mexico, and Arizona, and perhaps several other backward states, either relinquish your privilege of selecting two senators each or get out of the Union. You may, if you elect to stay in, have among you one senator, provided he promises to be seen and not often heard'."

Denver's $49,000,000

$49,000,000 is burning a hole in Denver's pocket these days. This is the total amount of private and municipal spending projects in the Colorado capital city, as included in a report by the Colorado Defense Council. The Council, headed by J. Fred Thomas, is being used by Governor John C. Vivian to make studies of postwar projects and job opportunities for veterans.

Denver's city government has a wide variety of projects ready to go, including an airport passenger terminal building; two small airports for privately-flown craft; a million-dollar water reservoir; 7 million dollars worth of housing, 13 million dollars worth of water works.

In addition there is an impressive amount for street and highway work in Denver, new railway trackage and shop facilities, enlargement of the Denver union railway station, conversion of the rail trolleys to trolley busses, and at least 6 million dollars worth of business construction, mostly in the downtown area.

Many of the smaller cities of Colorado reported improvement projects but "no funds on hand."

Outlays set up by major Colorado cities outside of Denver include Pueblo, 9 million; Colorado Springs, 6 million; La Junta, 2 million; Greeley, Boulder and Fort Collins, one million dollars each.

Mountain States Need Workers

More than 40,000 jobs are going begging up and down the Continental Divide in spite of the discharge of 26,000 workers from the region's war plants and military establishments. At Butte, Montana, the mines and smelters need 2,100 workers although the U.S.E.S. there has several hundred applicants for jobs. Those seeking jobs don't happen to have the right experience to fill the openings.

The region's greatest need is for lumber workers, but men in nearby states show no inclination to leave "home base." Denver employers need 7,000 men, by U.S.E.S. count in mid-October, but lack of housing is making it almost impossible to "import" labor. The war drained away many of the Rocky Mountain region's skilled craftsmen and whether they will return is none too certain.

Navy Dumps Surplus Goods

Nobody knew it, but the U. S. Navy made the mountain states a great storehouse for supplies of all sorts. Now the Navy is unloading, and the regional office of surplus property has become the biggest mercantile establishment in the entire area, according to its director, Col. John F. Hough of Denver.

"We are going to have more surplus here than can be sold here. That means buyers will come into the area from all over the country and goods will be packed and shipped," Col. Hough stated. "We shall probably establish display centers for new items in Denver and Salt Lake City, and this will obviate the necessity of buyers going to storage centers. The disposal of supplies will be managed in such a way as to maintain a sound economy rather than to realize the greatest amount of money."

Col. Hough revealed that one-ninth of all the Navy's stored supplies are located in Utah.

Industrial Gas Rates Slashed

Industrial gas users in the Denver area received good news in mid-October when the Public Service Company of Colorado announced its new rate structure. Commer-

(Continued on Page 82)

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The cross header, ball guide and elbow shown above are of 18-8. Warman also produces Navy, A.B.S. and various A.S.T.M. specifications and SAE steels.

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CONTINENTAL *(Cont'd from Pg. 81)*
cial users to the number of 6,100 are to benefit immediately by the new rates, and many others are switching to gas as fast as change-overs can be effected. The average reduction to commercial users of natural gas in Denver amounts to 24.1 per cent. Domestic consumers get an average reduction of 26.35 per cent. The wholesale rate to the Public Service Company at the city gates was slashed 46 per cent.

Uncle Sam's "Little Tokyos"

Dreams that the deserts would bloom as the industrious relocated Japanese settled down in the nine War Relocation Centers at a safe distance inland from the Pacific Coast went glimmering this month as one by one the "Jap Camps" emptied and closed.

The end of the war with Japan brought a quick increase in the return of evacuated citizens of Japanese descent back to California, Oregon, and Washington. However, thousands of the 110,000 removed forcibly from the Coastal states at the outset of the war, have re-located voluntarily in states outside of the Pacific Coast region.

At the time the relocation centers were hastily built by the army for the war relocation authority elaborate plans were laid for irrigation, crop raising, development of livestock, and many small industries were considered as a means of keeping the evacuees self-supporting.

Before long it became apparent to the evacuees themselves and finally to the government officials in charge that the sheltered life in the relocation centers had the same demoralizing and enervating effect on the inmates as the life led by Indians on Indian reservations. They were finding it fairly comfortable and fairly easy to lead a vegetable existence as wards of the government, and rapidly losing any character or gumption that may have been their nature when they were put behind the barbed-wire enclosures.

Nobody could think of any better solution at the time, but now everyone concerned is convinced that the sooner everyone forgets the government-built "Little Tokyos" the better it will be.

Rio Grande Railway Looks Back

No railroad is more progressive and up-to-date than the Denver & Rio Grande, and none gets a greater kick out of looking back to see where it thought it was going and where it has been.

General William Jackson Palmer launched the road 75 years ago, with such an empire-builder's vision that the region may still need another 25 years to catch up with it. He wanted a north-south road skirting the front or eastern side of the Rockies from the Canadian border to Mexico City. He believed that the railroad would carry fuel and other products from the Rocky Mountain region and adjoining states southward into Mexico, returning with tropical and semi-tropical products to be sold profitably in the markets of the United States.

The first unit of General Palmer's line was built from Denver to Colorado Springs in 1871 and 1872. Then it went on southward to Pueblo, where Palmer's steel mills soon were flourishing. But the Denver-to-Mexico City dream was thwarted by a "war" with the Santa Fe railroad. Checked in its southward drive, the Rio Grande railroad turned westward and opened up Leadville as one of the world's most productive mining districts, after which the road continued on to link up with other east-west roads. And the West is still awaiting a real north-south line, without which the mountain states will never grow up, in the judgment of many observers.

General Palmer had something, and all the West is joining with the Rio Grande in celebrating its 75th anniversary this year.

---

10 Lines Get 48 Ships For Intercoastal Trade

A total of 48 ships have been assigned by the War Shipping Administration to ten intercoastal lines for the resumption of commercial intercoastal shipping that was discontinued at the outbreak of the war.

The ten lines that received the ships in the following numbers which are to act as general agents for the War Shipping Administration are:

American-Hawaiian Steamship Company, ten ships for the North Atlantic and two for the South Atlantic.

Luckenbach Steamship Company, seven ships for the North Atlantic.

Isthmian Steamship Company, six ships.

Calmar Steamship Corporation, six ships.

Quaker Line, four ships.

McCormick Steamship Company, four ships.

Pacific Coast Direct Line and the Weyerhaeuser Steamship Company, joint service, four ships.

Arrow Line, three ships.

United States Lines, three ships.

American President Lines, one ship.

Los Angeles Wants To Hold A World Fair

Before very long it is highly likely that Hollywood publicity experts will be coining a new adjective to replace their older, overworked superlative, "super-colossal."

Probably the new one will be super-atomic, and the occasion for it will lie in the need for something that will give a sufficiently splendiferous description of a proposed World Fair tentatively scheduled for the years 1949-50 and slated to be held in the Los Angeles area.

Though Los Angeles is unwinding a power drive to have the scene of the event within its borders, a potent rival is developing in the city of Long Beach.

3 Roads To Buy 6 New Stainless Steel Trains

The Denver & Rio Grande Western Railroad will spend 1½ million dollars, the Burlington $2,460,000, and the Western Pacific $2,200,000 for six new stainless steel super streamline passenger trains for operation between San Francisco and Chicago by way of Denver.

The six streamliners, to be known as the California Zephyr and on order from the Edward G. Budd Manufacturing Co., Philadelphia, will be in service by late next summer. They will operate faster than the prewar schedule of any line operating between Chicago and the coast and will replace the Exposition Flyer.

The most revolutionary feature of the trains will be inclusion of the "vista dome" in all the coaches, in the observation lounge, and in a special "grill and tavern" car. The dome, an elevated glass-topped interior seating 24 persons in addition to those on the lower level, permits passengers to see ahead, as well as in all other directions for the first time in any railroad passenger car. They will be powered by Diesel locomotives.

Sisal Rope Production

All individual industry quotas and end use restrictions regarding sisal rope have been withdrawn, but though manufacture of sisal rope is now permitted and is in full swing, restrictions on production of Manila rope continue in full force, according to a government release. The use of hard fiber for the manufacture of wrapping twine, however, continues under wartime conditions.

Food Machinery Will Build California Plant

Construction of a new chemical factory at Richmond and conversion of its San Jose plant for laboratory and invention work will form two of the most important steps taken in California by Food Machinery Corporation in its recently announced $3,000,000 postwar expansion program.

The plant at Richmond is to be used for the manufacture of insecticide and fungicide sprays.

Food Machinery Corp. which employed about 2,000 workers in 1941, is currently employing about 4,500 and expects to supply 5,000 permanent jobs with the completion of its expansion program.

Mostly Peanuts

From a Surplus Property Board release dated September 19, 1945, comes the following: "For the first time, declarations as surplus of agricultural commodities and food assumed quantitative importance, reaching $4,014,000 in August; but this rise, the Board pointed out, was mostly owing to large declarations of peanuts."

Straws In The Wind From Western States

THE Western States Council aligned itself with the National Reclamation Association in opposition to development of river systems under "valley authority" legislation at its meeting in Salt Lake City early in October.

At the same time the council voted to support the reclamation program of the National Reclamation Association, taking the position that appropriations for this purpose do not fall into the category of governmental expenditures but can more properly be classified as loans which are repaid to the government.

Discussion brought out the fact that reclamation project costs are charged to various purposes but no mention was made of the new "theory of feasibility" which the U. S. Reclamation Bureau is following in plans for the comprehensive development of the Colorado River basin and other river systems.

Under this theory "economic feasibility" is a very broad term. It once meant the ability and the willingness on the part of beneficiaries of a project to repay the costs. But the new conception is that if a project costs $100,000,000 and adds more than that amount to the national wealth it is economically feasible, even though direct beneficiaries may be able to repay only part of the cost.

Within the Reclamation Bureau, and elsewhere, the view is widely held that reclamation projects under the old theory of feasibility are a thing of the past.

Council Backs Pacific Air Gateway

With surprisingly little controversy, the council agreed on a five point air transportation development program to urge upon the Civil Aeronautics Board and the congressional delegations of the 11 western states.

The program calls for: (1) A route through the mountain states to Alaska via Great Falls, Mont., and Edmonton, Can.; (2) Lines in Alaska which will give that territory access to and from air gateways at Seattle, Great Falls, and Minneapolis-St. Paul; (3) Oriental route through the Seattle-Tacoma gateway to Alaska and across the North Pacific to the Orient; (4) Trans-Pacific central route with terminals at San Francisco and Los Angeles; (5) Local air service between California points and Hawaii and between Pacific Northwest points and Hawaii.

Phosphate Study

A special phosphate committee submitted a partial report and was authorized to continue its study. While the council delayed action until a final report is prepared, the committee made it plain that they will oppose the principle of the Bankhead-Hill bill, which would provide for government-owned and government-operated phosphate plants. The measure is receiving strong backing from the American Farm Bureau Federation and local farm bureaus.

The committee, composed of E. J. Fjeldsted, Ogden; Gus P. Backman, Salt Lake City; and Paul V. Nash, Pocatello, indicated that it would favor private development of deposits in Idaho, Utah, Montana and Nevada with the government (probably the Department of Agriculture) cooperating with a program to encourage the use of fertilizer.

Public land policies, which were scheduled to be discussed at the meeting, were side-stepped for the time being. Council members decided it would be better to correlate activities in that field with the western governors' conference and the public lands subcommittee of the United States Chamber of Commerce than to launch off into an independent study.

Above: Strapped pallet loads handle easier in and out of cars.

Left: Pallet loads of wire economically braced with Acme Unit-Load Strapping.

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LABOR
AND THE INDUSTRIAL WEST

DATE on which the swan song of the WLB will reach its end is believed to be December 15. That is the day on which the prime movers of the agency feel the War Labor Board will pass into history. Even if it does, however, echoes of its passing will continue to sound for some time above the cacophony of industrial disharmony that is now making itself heard throughout the country.

The general delight felt at the issuance of General Order 40, which took the lid off wage raises is now subsiding in various quarters in the West through the realization that wages cannot be decreased below the highest rate paid in any plant from January 1, 1941, to October 3, 1942.

Not only that, but while wage raises can be made retroactive as far back as desired, all wage raises that were in effect on August 18, or that have been put into effect since that date, are now the legal rate and cannot be lowered.

This means that a wage increase given after August 18 is now the legal rate regardless of what the contract rate in effect on August 18 may have been.

Furthermore, if a manufacturer legally or illegally had been paying a wage rate higher than contract rate on August 17, and continued to pay that rate on August 18, that rate, even though it may have been illegal, is now the legal rate and cannot be lowered.

And, of course, just to complicate things still further, a manufacturer, whose formerly illegal rate of pay has now become the legal rate that cannot be lowered, is still liable to prosecution, and most likely will be prosecuted, for payment of that rate when it was against the law.

Such persons who see a ray of light in the coming demise of the War Labor Board shouldn't feel very cheery about it. In all probability the Treasury Department will take over the WLB functions including those that involve the prosecution of old cases. An alternative to the Treasury's moving in lies in the possibility of setting up a Wage Stabilization Board, which would simply take over all of WLB's unfinished business.

Unemployment Benefits

The decision handed down by the Unemployment Insurance Appeals Board in Sacramento, California, in favor of Bernadine F. Peterson and against the California Department of Employment is likely to set precedent not only in California but throughout the eleven Western States.

Mrs. Peterson, a former teacher of home economics in Iowa, started work as shipfitter's helper in a San Francisco shipyard at 95 cents an hour in September, 1943. By the time she was laid off in March, 1945, she had become a journeyman shipfitter at the rate of $1.20 an hour.

Immediately after her lay-off she registered for work as a shipfitter and filed a claim for unemployment benefits. Because she refused a few weeks later to take a job as an inspectress of lithograph layout on tinplate for a canning company at 95 cents an hour her claim for benefits was disqualified on April 26. A decision of a referee appointed by the Department of Employment backed up the disqualification.

When the case came before the Appeals Board in Sacramento early in September, however, the board ordered the referee's decision reversed and that the benefits be allowed.

Though the law plainly states that "work offered under 'suitable' conditions is suit-

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able if it gives the individual wages at least equal to his weekly benefit amount for total unemployment," the Appeals Board would not recognize Mrs. Peterson's offer of employment at 95 cents an hour as coming under that classification.

The fact that she could have earned more than twice the $20 weekly benefit maximum was not considered pertinent since the business agent of her union testified that jobs for shipfitters were available in the Bay area at the time of her request for benefits.

Anti-Government Strikes

Because of a rising feeling in the ranks of labor that the government in taking over strike-bound plants is acting merely as a strike-breaker, strong indications are beginning to appear that strikes will soon be called against such government-operated plants.

Veterans returning to western industrial areas from the wars are expected to be in sympathy with such strikes, if they arise, since labor leaders feel that returning veterans will not be at all happy at the prospect of jobs without the 30 per cent increase in rates that labor is demanding.

Only by means of receiving the proposed 30 per cent increase in rates will veterans be able to get any of the high wages that were paid during the war years when they were busy fighting for their country.

That, at least, is what the labor leaders feel, and that is precisely what they are not going to be backward in pointing out.

M. and M. Of L. A. Violated Labor Act

For violations of the National Labor Relations Act Section 8 (1) and Section 8 (2), the Merchants and Manufacturers Association of Los Angeles was found guilty last month by the United States Circuit Court of Appeals for the Ninth Circuit.

Specifically the association, together with a group of canvas manufacturers, was found guilty of acting in concert to dominate and interfere with the formation and administration of the Independent Canvas Workers Union, Inc.

Formation of the independent or "company union" started shortly after A. F. of L. and C. I. O. unions began organizing canvas workers in Southern California in 1937, according to the findings of the court.

Aid in formation of the independent union was received by the association from an organization called The Neutral Thousands, otherwise known as TNT, a nonprofit California corporation formed in October, 1937 for "educational purposes," and by Southern Californians, Inc., another nonprofit organization formed at the same time, the court said.

Penalties for violation of the National Labor Relations Act consist of fine or imprisonment, or both.

Nevada Estimates Loss of 5,500 Jobs

Studies based on the assumption that the war with Japan would end in the summer of 1946, and that the transition period would have sizeable difficulties, but not a heavy depression, have led the Nevada Employment Security Department to the conclusion that the state will experience a decrease of 5,500 jobs.

Estimated number of jobs during the transition is set at 23,500 for which a labor turnover of 20 per cent is anticipated. Out of an estimated number of 35,000 workers eligible for state unemployment benefits a total of 25,200 are expected to be beneficiaries.

Numbers of returning veterans and war workers to the state are figured at 15,000.

Workmen's Compensation Payments Not Reduced

Workmen's compensation payments are not yet to be reduced from $30 a week to $25 in California, according to Paul Scharrenburg, director of industrial relations and chairman of the industrial accident commission in the state.

Such payments are not to be reduced, he said, until there has been an official declaration that hostilities have ceased. The signing of surrender terms with the Japanese has not been construed as a termination of hostilities.

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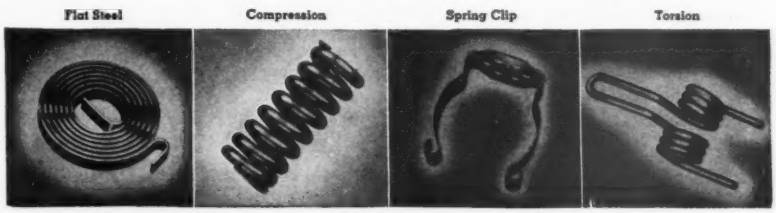

Labor Peace Act Invoked

An impending strike of automobile workers may cause the drastic Colorado "Labor Peace" Act to be invoked for the first time in more than two years. The law is the most drastic piece of anti-union legislation in America, according to labor leaders.

William I. Reilly, chairman of the state industrial commission, received a wire from Walter P. Reuther of the CIO-United Automobile Workers (General Motors Division), filing notice of "a labor dispute which may result in a strike," as required under the Colorado law.

Reilly retorted that the telegram did not constitute "formal notice" and that "neither absentee employers nor absentee labor leaders could repeal or modify Colorado's laws governing labor relations which have been above average for the nation."

There are only a handful of automobile workers in Colorado.

Indian Chief Guilty Of Breaking Labor Law

Among the 1,065 complaints of failure to pay wages received by the Division of Labor Statistics and Law Enforcement of the California Department of Industrial Relations in August was one involving the chief of a tribe of California Indians.

According to the division's monthly report, the chief was prosecuted for having kept his children out of school to employ them in violation of state labor and education laws.

After pleading guilty of the violations charged, the chief was assessed a jail sentence of 60 days and a $100 fine. The jail sentence and half of the fine were suspended on condition that he have his children attend school and that they not be employed again in violation of the laws of the state.

Denver Board Denies Job Wage Cuts

Application of 12 mountain states firms to reduce wages in certain job classifications have been denied by the Ninth Regional War Labor Board.

Red Lodge Canning Company of Red Lodge and Stevensville, Montana, had requested permission to pay lower wages to Mexican Nationals imported to help with war food crops. The labor board stuck to its rule of equal pay for equal work and denied the petition.

Other firms whose petitions were denied were Libby, McNeill and Libby, manufacturer of canned foods, Longmont, Colo., New Mexico State Bank, Albuquerque; Boise Winnemucca Stages, Inc., Boise; Industrial Power Units, Mills, Wyo., which repairs motors and motor equipment for the petroleum industry; Firesteel Lumber Company, Albuquerque, N. M.; Buckingham Lumber Company, Denver; Nez Perce Tractor and Equipment Co., Lewiston, Idaho; Borden Company, Logan, Utah; Kemp Lumber Co., Roswell, N.M.; Billings Dairy and Creamery, Billings, Mont.; and Great Falls Gas Company, Great Falls, Mont.

• F. W. Hunter, regional director for five Western states and Alaska (left); Robert C. Goodwin, national director of USES (center); and John Gross, USES regional director for Colorado, Utah, Wyoming, Idaho and Montana, are pictured reviewing a chart showing the inter-regional movement of workers at regional headquarters of Labor Dept.'s USES, in San Francisco.

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WLB Rules On Severance Pay

The Nonferrous Metals Commission of the National War Labor Board has handed down a decision which may well set a precedent for union contracts with companies whose activities have been sharply curtailed as a result of War Production Board restrictions during the war period.

The commission, in denying the request of the International Union of Mine, Mill and Smelter Workers, representing employees of the Golden Cycle Corporation, Colorado Springs, for sick leave, severance pay and a guaranteed annual wage, said as follows:

> "As regards severance pay, the Commission observes that during the war period the operations of the subject company were sharply curtailed as a result of War Production Board restrictions on gold mining. It is expected that the company will now resume the processing of gold ore and will increase its working force. Thus, the usual arguments in favor of severance pay are not present; the subject operations may be expected to expand rather than to contract in the reconversion period."

The board denied the request for sick leave but granted the union's request that injured employees, who, in the opinion of the company's doctor, are unable to finish the day's work, shall be paid for the full day on which injury was sustained. *But* the company was ordered to grant employees one week's paid vacation after a year of service and two weeks after 5 years.

Red Tape Hits Wage Increases

Labor unions requesting wage increases for employees which were entered with the National War Labor Board before Aug. 18, 1945, have been denied increases in at least two cases by the Nonferrous Metals Commission because "negotiations between the parties were conducted, demands made and records of the cases prepared prior to the easing of wage controls after V-J Day."

The Commission went on to say that it was "compelled to consider the issue solely in terms of principles and policies existing prior to Aug. 18."

Labor members dissented in the decision denying a wage increase for employees of Morris P. Kirk & Son, Inc., Los Angeles, which had been requested by International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America, AFL, and the International Union of Mine, Mill and Smelter Workers, CIO.

Employees of the Kennecott Copper Corporation, represented by the White Pine County Metal Trades Council, AFL, were denied a wage increase for a similar reason. An increase of 42 cents an hour for 160 maintenance employees of the corporation (Nevada Mines Division) Ruth and McGill, Nevada, was at stake. Severance pay in this case was likewise denied.

The Kirk Company's request for a no-strike clause in its contract with the Teamsters Union was denied. The commission based its denial on the particular case involved since it "did not appear any advantages might result," and observed that the NLB has been reluctant in the past to introduce such a provision into agreements. Voluntary maintenance of union membership with a 15-day escape clause and check-off of union dues was awarded the union.

Brake Firm Told To Raise Wages

Voluntary maintenance of union membership with a 15-day escape clause and check-off of union dues for employees of the American Brake Shoe Company, Denver, has been ordered by the Ninth Regional War Labor Board.

The RWLB's decision settled a dispute between the iron foundry and the International Molders and Foundry Workers Union, AFL.

A general increase of four cents an hour for all but two job classifications, three cents of which are retroactive to May 3 and the remaining cent to July 28, 1945, was agreed to by both sides. Two new job classifications—pallet man and sand mill man—will be increased seven cents an hour above the laborer rate of 66 cents. Increase is retroactive to July 28, 1945.

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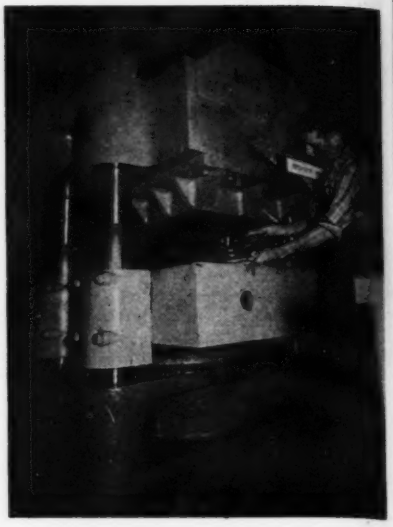
Rubber Pads Used To Make Plane Parts

HEAT resisting synthetic rubber forming pads are the newest development in the war born hydro-press technique for the fabrication of metal aircraft parts. In this literal mating of rubber and steel, use of the hydro-press dies thus formed replaces the tedious and slow process that prevailed before the war. In many instances before the use of rubber, square pieces of aluminum were joined together with thousands of rivets to serve the same purpose.

Since the beginning of the war, rubber forming pads, used as the female die, have had general application in the cold forming of aluminum parts for Pacific Coast aircraft manufacturers.

The rubber pads have been a key factor in the rapid expansion and production record of the aircraft industry, greatly reducing the amount of time required for tooling up for new models and design changes.

The use of the rubber forming pad, takes advantage of rubber's ability to flow when pressure is exerted. When, under the pressure of the hydraulic ram, the rubber presses the aluminum into the shaping tools, the fluid quality of the rubber permits it to flow into every irregularity and forces the metal into the desired shape.



• Two magnesium metal aircraft parts are shown here after forming under the 600-ton pressure of a huge hydropress used in Consolidated Vultee's San Diego division experimental factory. . . . Aluminum also can be molded in the same manner.

An additional characteristic of rubber known as its modulus, conditions the free flow of the material. Because of this resistance to free flow, the rubber, under the compression of the hydraulic ram, will exert pressure against the metal to be formed. The modulus of rubber, therefore, distinguishes it from a free-flowing liquid such as water. Water under similar conditions would simply flow around the plate suspended from the plunger. No effect, therefore, would result from pressure applied to the plunger, since the free flow of the water dissipates the applied energy.

Plastics May Be Used

The typical forming pad is a homogeneous chunk of rubber weighing as much as 2800 pounds. The rubber pad replaces the female die in the usual mated steel dies used in hydraulic presses. The single die used with rubber may be made of softer material such as plastics or zinc, thus saving time in the tooling process.

The heat resisting synthetic rubber forming pad was developed by the United States Rubber Company for the fabrication of metal airplane parts. This pad, the first of its kind, will withstand temperatures up to 450° F. required by the process. In addition to being heat resistant, it is built to withstand severe flexing and long wear. In the case of this pad as well as the cold forming process, the rubber returns to its original shape when released.

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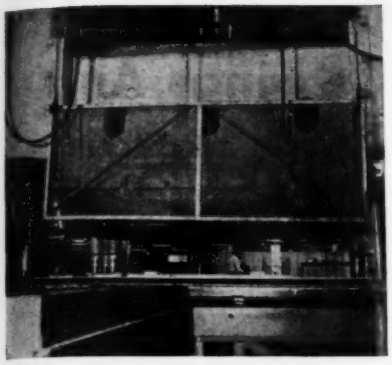


o North American Aviation's rubber forming pad is 7½ inches thick, 45½ inches wide and 109 inches long; total weight is 2,045 pounds. The press exerts 3,000 tons pressure. Parts for every Mustang fighter made have been fabricated on this press.

5,200 Vets Enter Wyoming Labor Market

Out of the 5,200 veterans announced in October as having returned to Wyoming, according to figures supplied by the state veteran service committee, only 10 had made claims for unemployment compensation and only 15 had applied for self-employment aid under the veterans readjustment allowance fund in the month of September.

Total employment needs for the state were reported by the United States Employment Service as numbering approximately 2,800 additional workers for the month of October.

Because of the reluctance of men to take lower paid jobs such as those in hotels, restaurants and small businesses, a decided tendency for women to replace men was becoming evident.

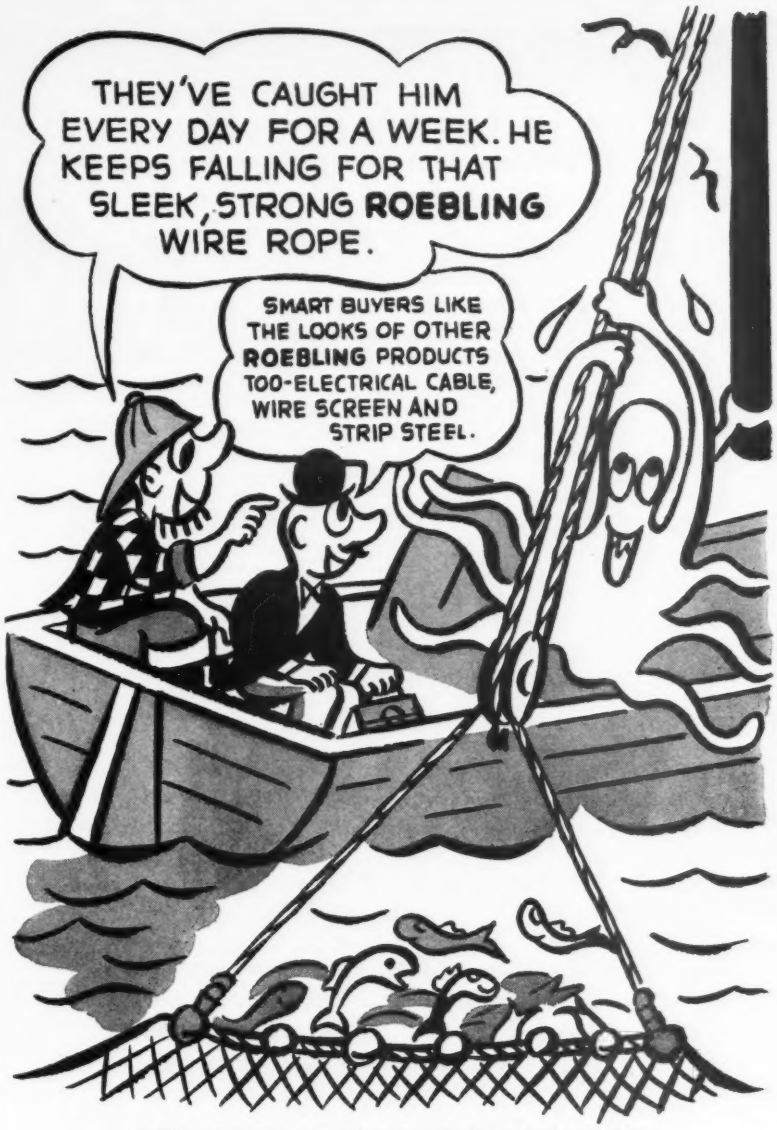
Labor needs in the state included the following: coal mines, 700; manufacturing, 280; logging and lumbering, 150; transportation, 300; agriculture, 500; construction, 200; government workers, 600.

Bauxite Production Plunges in 1944

Because of large stocks and a sharply decreased demand, domestic mine production of bauxite in 1944 dropped sharply to 3,721,135 tons as compared with the 8,156,551 tons produced in 1943. Dollar value of the 1944 production was $14,402,497 while that of the previous year was set at $30,659,900.

Social Security Frozen

Social security payroll deductions have been frozen at their present level for another year by action taken concurrently by the Senate and House of Representatives. Worker and employer alike will continue to contribute one per cent each to the fund.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Copper-Lead Bearings And Lead Sweating

WITH the increasing use of copper-lead bearings containing a high percentage of lead, a recent technical service report by W. Wallace MacLean, in charge of the technical advisory service of Smaller War Plants Corporation at San Francisco is of interest. The problem was submitted by Andy Tyroler of Liberty Brass & Bronze Foundry, San Francisco, and concerned the prevention of "sweating" in high lead bearing castings. He said:

"We have difficulty getting a homogenous casting when melting small bearings with a copper-lead mixture. The lead 'sweats' or precipitates after pouring in the moulds. The ingot analysis follows:

	Per cent
Copper	66 to 68
Lead	27 to 31
Tin	3 to 4½
Zinc	1 to 2

We melt in Jones type U.S. Rotary oil-fired furnaces. Sand is machine mixed and the moisture content is maintained within 3½ to 6 per cent. We pour around 1950° to 2000° from preheated graphite crucibles."

One of the sources to whom this question was presented, Richard W. Gass, sec.-treas. of the U. S. Smelting Furnace Co., Belleville, Ill., replied:

"So-called 'sweating' of the lead, after the pouring of the molten copper-lead mixture into moulds, is traceable in a great many instances to the incorrect practice of removing the castings too quickly from the moulds. In this case the newly poured and dumped castings retain sufficient heat to keep the lead content in the metal mixture in a molten state and due to a lack of natural affinity between the copper and lead elements and the large variation between their respective melting temperatures, the copper sets quickly and thus forces the still molten lead out of suspension to the face of the casting where it readily solidifies.

"To overcome this, it is necessary to permit the castings to remain in the sand moulds for a longer period of time and thus gradually cool by degrees, this forcing the lead to be held in suspension until cooled. Naturally, the length of time depends primarily on the weight and size of the casting.

"The pouring temperature of the metal mix is also highly important and pouring should always be done on the hot side rather than too cold. High lead metal mixtures should be poured at a temperature somewhat higher than ordinary brass mixtures for the same size and shape of

casting. The proper temperature depends primarily on the size and shape of the casting, wall thickness, the method of gating and the size of the gates.

"Ordinarily, the gates should be large and thick when compared to those used when pouring the same size casting in ordinary red brass. In other words, gates 1/8 in. in thickness for ordinary brass castings may have to be increased to possibly 1/4 in. for the lead bearing mixture.

"It is our suggestion that the customer experiment to some extent in pouring at various temperatures, for the 1950° to 2000° specified in their letter to you appears to be rather low to us, although we are not acquainted with all the determining factors. Under any conditions, however, it is highly important that the castings be permitted to remain in the moulds for a sufficient period of time before dumping.

Addition of Nickel

"The addition of from 1 per cent to 2 per cent of nickel in the form of 50-50 copper-nickel shot also assists materially in preventing the segregation of the lead content. Generally, this addition should be specified at the time of purchasing the ingot metal, but can be added to the melt in the furnace just after the charge has become molten. After this addition in the furnace, the entire bath should be well stirred and the temperature brought up to the proper degree for pouring.

"Addition of raw zinc in a quantity of 2 or 3 ounces per 100 pounds of molten metal is also advantageous. This should be added only after the molten metal has been poured from the furnace into the crucible or ladle and after skimming. It should be well stirred into the molten metal, the metal again skimmed and poured. Under no condition should phosphorus be added, for this would increase the fluidity of the metal and simply aggravate the conditions.

"Your letter does not mention whether the castings show any indication of porosity, which, if prevailing, is generally attributable to improper melting and improper fluxing. No doubt our customer has our instruction book on hand, giving information on proper melting and proper flame and furnace atmospheres. Proper fluxing is important and for the kind of metal described we would suggest the use of charcoal of from 1 in. to 1 1/2 in. in size, plus the use of glass and borax in an amount just sufficient to form a light fluid covering not exceeding 1/16 in. in thickness over the entire bath. The use of too much flux hinders melting and prevents the absorption of the heat by the metal.

"Your letter further mentions that the sand is machine mixed with the moisture content maintained within 3 1/2 per cent to 6 per cent. There is the possibility that the minimum 3 1/2 per cent is too low and it is likely that it should be from 5 1/2 per cent to 6 1/2 per cent, depending on the clay content."

High Heat Use

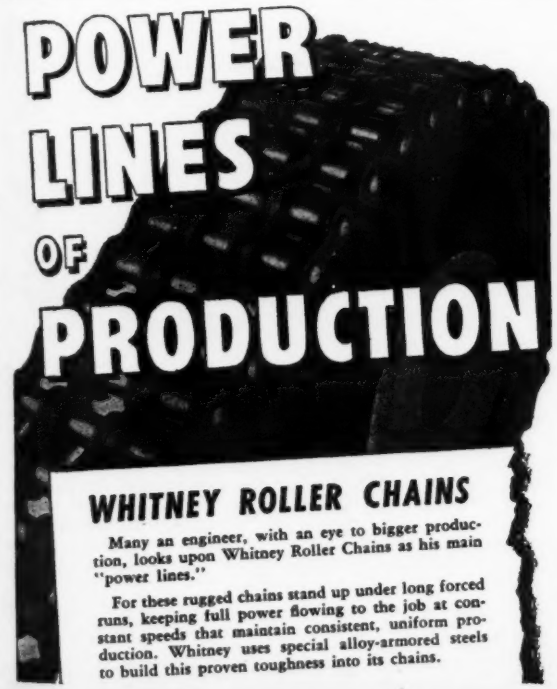
W. B. George, R. Lavin & Sons, Inc., Chicago, wrote:

"I advise that you heat this alloy to 2200° F. under an oxidizing flame and cast. The U. S. Rotary Jones furnace is an ideal medium for melting this material. This alloy must be cast at high temperature."

M. H. Kalina, supervisor of ferrous metallurgy, Armour Research Foundation, Chicago, states:

"Generally a copper lead mixture is difficult to pour because only a small amount of lead is soluble in copper. The pouring procedure must be one that traps the lead in a fine evenly distributed state. The great difference in density and melting point of the two metals adds to the problem. Some manufacturers make lead copper bearings by the powder metallurgy technique and are thus able to circumvent some of the difficulties of segregation.

"In casting, the metal should be stirred immediately before pouring. If it is poured at as low a temperature as is consistent with a satisfactory casting quality, less time will be allowed for lead separation during solidification. 1800° F. would be good if you could cast the metal at such a low temperature. Your tin addition



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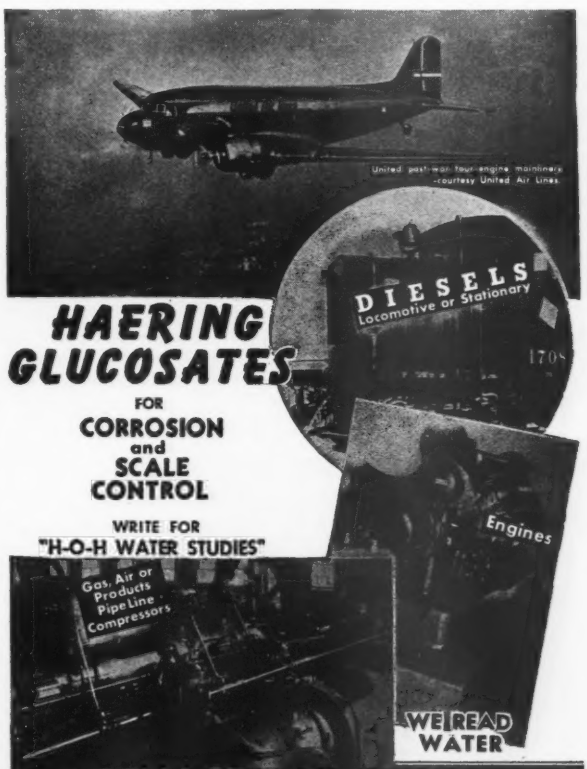

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should help to prevent segregation. Chill molds for the castings would greatly help to prevent separation. Sometimes lithium, arsenic, nickel and manganese are added in small quantities, singly or mixed, to help reduce segregation."

Edward L. Middleton, engineering division, Smaller War Plants Corporation, Washington, D.C., wrote:

"It is recommended that to the present ingot analysis, which you submitted, nickel be added ½ per cent and reduce the zinc from ½ to ½-1 per cent."

Construction Starts On Low Cost House

Fabrication of all plywood and lumber parts that are to be used in construction of a new mass-produced, mass-marketed house that is to sell for less than $3,000, is to take place in the Pacific Northwest, according to an announcement by the WillisWay System of Chicago which plans to market the parts through a distribution system of over 21,000 retail lumber dealers throughout the country.

Though steel and plywood will be combined as the two basic structural materials in production of the house which is to be known as the HomeOla, all wall and floor panels are to be of plywood stressed-skin construction with the panels glued to both sides of light wood framing members. Floor sections will have special wearing surfaces of vertical grain fir, and roof rafters will be of built-up plywood completely fabricated at the factory. Longitudinally braced plywood roof decking will be placed over the rafters and to the decking conventional finished roofing will be applied.

The basic design calls for a house 20x24 feet in area with two bedrooms on the second floor. For those desiring larger quarters other models make more space available.

The first of the HomeOla units has already been set up at Tacoma, Washington where the Buffelen Lumber & Mfg. Co. is now tooling up its assembly line for production of 100 units ordered by lumber dealers throughout the country for display purposes.

United Mine Workers Win

The Vanadium Corporation of America, Naturita, Col., has been ordered to increase wages from two to six cents an hour in five job classifications, by the Nonferrous Metals Commission of the National War Labor Board. The decision settled a dispute between the company and the United Mine Workers of America, District 50.

Though other union requests for reclassifications were denied at the time, indications are that attempts to obtain them will soon be made again.

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Model AR

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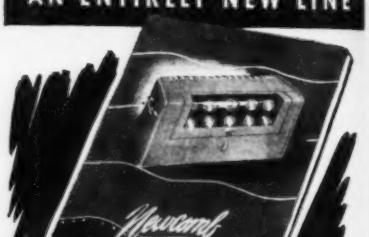

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EFFICIENCY KINKS FROM WESTERN PLANTS

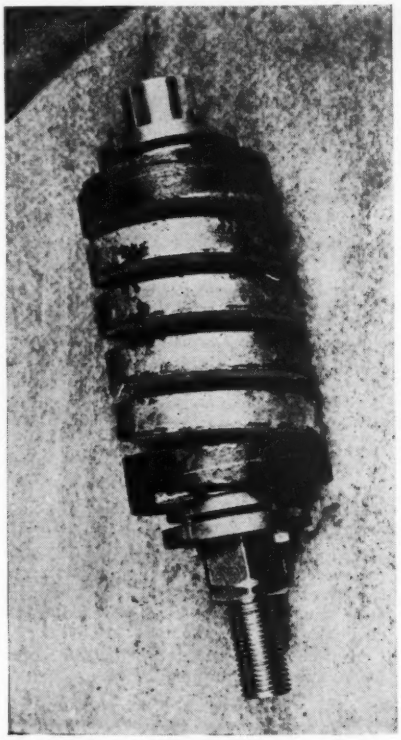
Production short-cuts • Worker's suggestions • Prize-winning awards

The job of machining or truing up large heavy springs to a predetermined working length has been simplified by a spring mandrel designed by John A. Nodson, a Mare Island Navy Yard worker.

The spring, after having been compressed to its working length and checked for alignment, is placed in the mandrel and compressed. It is held central by a fitted plate at each end. Each plate has an angle at the back which contacts with a ball joint, thus forming a self-aligning socket backed by a plate with four set screws which are used to permit the lines which were drawn on the spring in the spring tester to run parallel. The set screws are left in contact with the fitted plates to keep them from shifting.

After this has been done the ends of the springs are then faced in a lathe with a carbide tool, and the remaining portion of the spring, which cannot be machined off since it is covered by the plate, is ground off by hand.

New Spring Mandrel



Success of the device is seen in the fact that machining time per spring has been cut by an average of two hours, thus effecting savings of over $1100 at the Mare Island Navy Yard since its adoption.

* * *

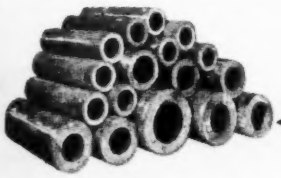
A mandrel to replace a hand tubing bender, use of which required considerable time in forming hose rings, has been designed by L. L. Stapleton of the Douglas Aircraft Company at Long Beach, Calif.

The mandrel which assured production of perfect rings, thus speeding up flash welding, resulted in an estimated savings of 800 man-hours a year. It was designed to fit into a lathe chuck. On it the hose rings were spun in the form of a coil spring. When the spring was removed it sprang to the proper size after which it was placed on a saw block of the same dimension as the wire coil. A band saw then severed the whole roll of wire coil at one time thus making the individual coil rings.

KINGWELL

PHOSPHOR BRONZE

BAR STOCK



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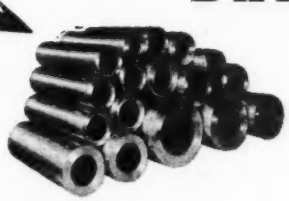

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WESTERN SALES REPRESENTATIVES FOR OILITE BEARINGS

THE PICTURE

Industry's turn-around for production of peacetime goods and services that began with the Japanese surrender is slowing as labor unrest rises to a crescendo. Strikes in lumber, transportation and the metals industries with a still unsettled condition in oil all indicate that the day when industry and labor will get down to business in the West is still in the future. But elsewhere on the economic scene, such as in the resumption of coastwise traffic, is evidence that the work of reconversion is still going on.

Lumber—*Production Off*

Because of strikes which shut down about half of the mill production during the latter part of September, West Coast lumber production dropped to 62.6 per cent of the 1941-'44 average after hitting 69.7 per cent in August. Output of logs, however, did not fall since only a few of the logging camps were shut down. As a consequence it is expected that lumber production will rise rapidly soon after the end of the strike in accord with increasing log inventories.

While unfilled orders at September's end are over 300,000,000 feet below the billion mark of earlier in the year, the lower figure represents no lessening of demand. Reason for the decline lies in the unwillingness of the mills to accept commitments in the industry's present unsettled state.

Cumulative figures are 39 weeks in 1945 and in previous years in thousands of board feet are as follows, according to the West Coast Lumbermen's Association:

	39 Weeks 1943	39 Weeks 1944	39 Weeks 1945
Production	5,898,101	6,027,455	4,970,427
Pct. of 1941-'45 years of production	93.2%	95.2%	78.5%
Orders	6,334,345	6,431,507	4,970,427
Shipments	6,044,308	6,053,954	5,019,024

Western Pine Association figures covering Idaho White Pine, Ponderosa Pine, Sugar Pine and associated species for the current year ending September 29, 1945, are:

	1944	1945
Orders	2,764,232	2,362,883
Shipments	2,686,672	2,364,718
Production	2,545,346	2,204,978

Copper—*No Change*

Though there was virtually no change in the overall production of copper in the 11 Western states during the month of August, production in Nevada jumped over 2,000 tons above the July figure for a total of 5,000 tons in the month.

Mine output by states for the months of July and August was as follows:

	July	August (Prelim'ny)
Arizona	22,055	21,850
California	341	400
Colorado	121	119
Idaho	116	125
Montana	6,651	6,150
Nevada	2,921	5,000
Utah	19,826	19,300
Washington	431	450
Other	4,716	4,208
Totals	52,462	53,394

Aircraft—*Output Plummets*

With the number of workers in the Pacific Coast aircraft industry far lower than in the days immediately before Pearl Harbor, production has decreased at the rate of over 50% a month successively since the first great drop in July. Nonetheless, as the industry struggles with enormous reconversion problems it is apparent that it will remain one of the major businesses of the West.

Figures from the Western District, Air Technical Service Command, is as follows:

	No. of Planes	*Total Pounds*
January, 1945	1,630	22,440,000
February	1,436	21,146,000
March	1,621	24,146,000
April	1,437	22,973,000
May	1,336	22,578,000
June	1,196	20,007,000
July	906	16,012,000
August	442	8,873,100
September	234	4,544,100

Cement—*Slight Declines*

A tapering off in production of Portland cement has begun despite a slight increase in the Colorado-Idaho district. The decline is almost entirely due to seasonal reasons and is expected to continue during the coming months.

PRODUCTION
(In thousands of barrels)

	—California—		*Oregon-Wash.*		*Colo.-Wyo. Mont. Utah - Idaho*	
	1944	1945	1944	1945	1944	19
Jan.	1,080	1,258	317	269	156	1
Feb.	1,000	1,191	291	243	147	9
Mar.	1,231	1,226	381	250	195	12
April	1,217	1,257	368	268	138	1
May	1,260	1,396	205	273	323	2
June	1,180	1,439	511	303	249	3
July	1,312	1,538	454	278	237	3
Aug.	1,129	1,491	446	245	291	3

Lumber production in thousands of board feet by states of the 11 Western States during the first six months of 1945 is shown in the following table. Figures for Utah and Wyoming are not reported separately. Source is the Lumber and Lumber Products Division of the War Production Board.

	Arizona	California	Colorado	Idaho	Montana	New Mexico	Oregon	Washington
January	12,900	119,449	7,123	51,876	21,034	4,872	477,191	332,5
February	12,348	105,701	6,516	51,154	21,324	6,257	453,271	302,9
March	9,429	126,002	6,103	59,322	27,669	6,402	494,204	322,4
April	12,349	170,362	5,473	60,562	24,029	6,237	471,151	309,5
May	16,656	247,665	6,414	72,672	37,763	9,932	500,898	338,6
June	14,211	262,529	6,786	73,806	42,728	7,651	491,757	331,4

Lumber production in thousands of board feet from Western Softwoods in the first 6 months of 1945 are as follows, according to figures by the Lumber and Lumber Products Division of the War Production Board:

	Port Orford Cedar	Western Red Cedar	Douglas Fir	White Fir	Western Hemlock	Larch-Douglas Fir	Ponderosa Pine	Sugar Pine	W. White Pine	Redwood	Sitka Spruce	Other	Total
January	3,750	18,030	573,463	25,641	55,942	49,983	196,499	10,303	25,289	35,495	25,111	17,241	1,036,7
February	3,854	12,926	522,521	14,498	53,878	52,865	201,420	9,551	22,464	32,284	22,977	19,269	968,5
March	4,534	14,551	553,539	19,343	76,823	48,769	238,175	13,296	24,562	34,304	16,585	16,569	1,061,6
April	4,120	15,085	515,391	23,955	45,980	76,180	274,362	14,340	25,522	35,168	19,810	16,480	1,044,3
May	3,000	12,572	548,664	34,289	56,802	94,127	354,335	22,482	34,757	39,800	20,194	17,565	1,233,5
June	2,464	17,761	526,108	40,164	51,618	103,730	365,888	26,419	25,415	38,277	19,976	22,090	1,239,8

Electric Energy—*July Peak*

Production of Electric Energy for Public Use—In thousands of Kilowatt Hours—Source: Federal Power Commission

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mtn.	Washington	Oregon	California	Total Pac
January 1945	206,308	93,231	22,209	97,960	44,440	330,526	37,908	234,315	1,066,897	954,958	331,980	1,259,968	2,546,9
February	188,781	84,619	18,385	87,980	40,066	297,242	29,773	206,485	953,331	868,143	295,324	1,122,227	2,285,6
March	195,818	95,634	19,135	98,484	44,741	295,689	32,387	279,405	1,061,291	953,643	366,037	1,244,797	2,564,4
April	189,951	108,446	19,636	91,413	45,024	260,694	34,449	225,369	975,982	853,860	393,408	1,297,580	2,544,9
May	173,987	115,524	22,309	94,597	44,350	277,722	40,783	231,922	1,001,194	855,407	385,759	1,434,904	2,676,0
June	168,264	107,417	24,173	91,789	49,116	295,584	41,936	207,115	985,394	785,238	379,702	1,413,023	2,577,9
July	188,037	123,410	24,955	99,188	50,592	261,368	28,189	191,872	967,611	789,255	392,329	1,589,115	2,768,6
August	192,465	115,684	23,807	96,475	52,503	273,441	29,457	191,899	975,731	748,570	424,044	1,536,715	2,709,3

Coal—*Production Off*

Reports by United States Bureau of Mines

	Montana	Wyoming	Colorado	New Mexico	Utah	Washington	Other	Total
Jan. 1945	460,000	956,000	760,000	153,000	660,000	140,000	2,000	3,131,0
February	390,000	792,000	730,000	130,000	540,000	128,000	1,000	2,761,0
March	472,000	890,000	763,000	157,000	620,000	140,000	1,000	3,043,0
April	325,000	712,000	565,000	115,000	532,000	110,000	....	2,359,0
May	356,000	810,000	516,000	135,000	543,000	110,000	1,000	2,471,0
June	385,000	805,000	518,000	118,000	540,000	104,000	1,000	2,471,0
July	375,000	790,000	500,000	120,000	510,000	95,000	1,000	2,391,0
August	380,000	768,000	556,000	116,000	502,000	108,000	1,000	2,431,0

Unemployment Insurance Benefits—*Applicants Increase*

Note: Figures under applicants include all those first paplying for payment of unemployment benefits as well as those applying renewal of a claim at the beginning of a new period of unemployment. Figures under recipients indicate the total number of persons receiving checks. No reports have yet been furnished by the state governments of Nevada and Wyoming.

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
APPLICANTS											
July	899	32,535	185	246	68	...	35	743	225	7,983	...
August	3,149	92,923	1,296	115	110	...	51	4,490	410	20,132	...
September	2,898	....	1,919	213	167	...	80	7,353	620	.....	...
RECIPIENTS											
July	609	24,395	1,127	226	568	...	95	1,533	158	587	...
August	987	25,385	1,009	281	635	...	107	1,364	222	1,166	...
September	2,757	.....	2,378	225	746	...	145	....	408	.....	...

Employment—*Eleven Western States*

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
ALL INDUSTRY DIVISIONS													
January	102	92.7	60.5	257	77.9	108.1	139	37.9	875	624	361	2,504	3,489
February	101	92.9	59.8	257	78.0	109.1	138	38.1	874	621	353	2,506	3,480
March	102	92.6	60.5	258	79.5	109.5	137	38.6	878	619	347	2,487	3,453
April	107	91.6	59.4	257	79.7	109.4	138	39.0	881	615	344	2,467	3,426
May	108	93.0	60.5	260	81.4	110.3	138	41.1	892	613	343	2,434	3,390
MANUFACTURING													
December	13.2	14.7	4.8	48.3	5.0	18.1	28.5	1.9	135	254	138.1	877	1,269
January	12.6	13.1	4.2	44.9	5.1	18.9	26.1	1.8	127	251	162.8	854	1,268
February	12.0	13.2	4.3	46.4	5.3	19.5	26.5	1.8	125	249	154.9	847	1,251
March	11.9	13.5	4.2	47.2	5.1	19.4	22.5	1.7	126	247	147.0	824	1,218
April	12.1	13.3	4.3	46.9	5.0	19.6	22.0	1.7	125	240	143.0	803	1,186
May	12.1	14.2	4.1	47.0	5.0	19.5	21.7	1.6	125	235	140.5	760	1,136

Seasonal increases in the apparel and canning industries of California are responsible for the offsetting of employment declines of July and August in the durable goods industries, according to an announcement by the California Department of Industrial Relations, Division of Labor Statistics and Research.

As a result in August total factory employment in California rose slightly to 639,000 from 636,800 in July. In August of 1944 total factory employment amounted to 843,000, and the year before the figure was 968,000. For August, 1939, on the eve of Hitler's invasion of Poland that started World War II, manufacturing wage earners in California numbered 322,500.

Indicative of the high production record of California plane plants during the critical days of the war is the fact that V-J Day found the number of aircraft production workers in the state nearly 24,000 less than the 135,000 employed in December, 1941.

EMPLOYMENT—DURABLE GOODS INDUSTRIES
(Figures from Calif. Div. of Labor Statistics)

	San Francisco Bay Area	Los Angeles Indus'l Area	Total State
December	182,300	290,400	565,900
January 1945	178,600	288,400	558,700
February	175,700	287,200	555,800
March	161,600	283,700	537,700
April	148,100	272,500	512,800
May	140,500	254,000	481,700
June	134,400	234,900	450,700
July	124,400	226,100	431,100
August	117,900	217,100	414,000
September	84,100	149,600	288,500

Oil—*Shortages Loom*

Though gasoline stocks at service stations and refineries in event of an actual continued shutdown due to strikes in the Pacific Coast territory may exceed the 12,000,000 bbls. estimated on hand at the end of August, it is believed that gasoline would soon become nonavailable in such a case.

Total amount delivered by the oil companies in the Pacific Coast area, including all deliveries to the federal government and any offshore shipments and including transportation and other losses, is as follows:

	All Products (Bbls.) 1944	1945
January	993,000	1,066,000
February	1,011,000	1,124,000
March	1,018,000	1,068,000
April	954,000	1,148,000
May	900,000	1,135,000
June	969,000	1,085,000
July	884,000	1,011,000
August	883,000	1,010,000

Iron—*Output Slows*

IRON ORE SHIPMENTS FROM MINES
(Reported by Bureau of Mines)

	Utah	Wyoming	Calif.	Total
January	175,735	65,318	33,205	274,258
February	138,594	53,619	16,251	208,414
March	182,576	58,934	18,291	260,401
April	190,157	45,253	32,065	267,475
May	185,632	43,047	32,913	261,592
June	164,783	52,461	29,872	247,116
July	142,461	44,434	28,086	
August	176,061	47,430	100,755	

Pig iron and steel production for the Western area of the United States are reported by the American Iron and Steel Institute in net tons as follows:

		Percent of capacity	Year to date	Percent of capacity
Pig Iron:				
January	172,223	71.5	172,223	71.5
February	151,409	69.6	323,632	70.6
March	171,151	71.0	494,783	70.7
April	162,738	69.7	657,521	70.5
May	149,184	61.9	806,705	68.7
June	141,334	60.6	948,039	67.4
July	141,317	58.8	1,089,356	66.1
August	135,740	56.3	1,225,096	64.9
Alloy Steel*:				
January	2,549	.....	2,549	.....
February	3,489	.....	6,038	.....
March	5,475	.....	11,513	.....
April	2,474	.....	13,987	.....
May	4,423	.....	18,410	.....
June	4,016	.....	22,426	.....
July	5,688	.....	28,114	.....
August	1,531	.....	29,645	.....
Steel Total:				
January	367,927	88.2	367,927	88.2
February	333,170	88.4	701,097	88.3
March	373,350	88.6	1,074,447	88.7
April	344,695	85.3	1,419,142	87.8
May	308,784	74.0	1,727,926	85.0
June	306,862	75.9	2,034,788	83.5
July	298,743	71.7	2,333,531	81.8
August	267,468	64.1	2,600,999	79.5
Carbon Ingots, Hot Topped*:				
January	52,514	.....	52,514	.....
February	54,049	.....	106,563	.....
March	56,450	.....	163,013	.....
April	51,498	.....	214,511	.....
May	37,426	.....	251,937	.....
June	21,144	.....	273,081	.....
July	9,073	.....	282,154	.....
August	8,204	.....	290,358	.....

**Included in total steel.*

Ships—*Still Building*

Figures for September ship construction are as follows:

1945	Keels Laid	Ships Launched	Ships Deliv'd	Thousands of Deadwt. tons
Jan.	50	52	52	523
Feb.	42	45	55	567
Mar.	50	50	55	612
April	43	50	47	487
May	38	46	53	534
June	38	44	46	466
July	29	42	42	409
August	15	23	31	335
Sept.	2	14	28	250

(Includes destroyer escorts and small aircraft carriers, but not larger naval vessels built by the navy itself. Also includes concrete barges, but not tugs or wooden barges. Deadweight tons are used as a rough measure of the cargo carrying capacity of the ship. All figures from U. S. Maritime Commission statistical department.)

THE TREND

While labor unrest is increasing there is no slackening of interest on the part of Eastern manufacturers in locating industrial units in the West. Peace has to be born as well as war and labor unrest is merely part of the birth pangs. Since labor unions are no more anxious to exhaust their treasuries in strikes than corporations are to pass up profits through shutdowns, the trend is towards an early settlement of industrial strife. Regardless of labor unrest, however, most Westerners are settling down to a peacetime economy.

Warehousing —*Space Available*

Though a commonly heard complaint is that warehousing space available in the West is far less than that available elsewhere in the country, the fact is that there is actually very little difference. In the middle Atlantic Division space is filled to 90.8 per cent of capacity; East North Central Division is filled to 90.7 per cent while that of the South Atlantic Division, which is least filled, has a total of 86.0 per cent occupied. In the 11 Western States it amounts to 91.4 per cent. In each of the 11 Western States percentages occupied are as follows, according to the Director of the Census:

	Mountain and Pacific Division	Idaho	Montana, Utah and Wyoming	Arizona, Nevada and New Mexico	Colorado except Denver	Denver	Washington except Seattle	Seattle	Oregon except Portland	Portland	California except L.A. and S.F.	Los Angeles	San Francisco
July 1945	91.4	91.9	85.3	94.1	64.9	77.8	88.2	97.5	97.3	89.4	87.4	95.7	94.2
August 1945	91.6	95.0	85.2	92.2	67.3	82.8	91.4	96.3	97.3	85.0	90.6	95.0	93.9

Surplus Property —*Sales*

Following are the dollar totals of sales in each of the 11 Western States made by the Department of Commerce, Surplus Property Division. Since V-J Day the sales totals in each state have been jumping rapidly, according to the Division's preliminary reports.

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
July	3,653	233,539	24,914	10,002	21,243	262	3,347	18,988	19,665	111,103	491
August	21,840	442,883	422,698	49,720	14,585	11,098	3,547	153,660	64,659	436,979	37,994

Lead —*Slight Increase*

While national lead production declined in August, the 11 Western States showed an increase of 339 tons over the figure for July, ending the downward trend in production that began in April. Output, however, continued to be lower than the average monthly production since 1934, which is 14,112 tons. In Washington output doubled, leading the increases of both Idaho and Utah. Colorado's remained unchanged and Arizona showed a decline. Following figures for the first eight months of the year are supplied by the U. S. Bureau of Mines:

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Utah	Washington	Wyoming	Total
January-March	4,807	1,239	3,756	18,793	2,837	1,404	1,795	11,104	1,220	....	46,955
April	1,815	578	1,324	6,445	1,061	583	621	3,687	292	....	16,406
May	1,900	527	1,222	6,073	1,213	575	690	3,835	315	3	16,353
June	1,716	483	1,330	6,102	972	697	634	3,824	295	....	16,053
July	2,035	567	1,361	5,000	1,068	552	590	2,602	152	....	13,867
August (preliminary)	1,850	500	1,333	5,150	975	700	593	2,800	305	....	14,206

Zinc —*Production Off*

Production of zinc for the entire United States sustained the biggest drop in August in the area of the 11 Western States where output fell 2,033 tons below the July figure. Heaviest decline in the West occurred in Idaho, 1,096 tons, through the shutdown of the Bunker Hill plant at Kellog. Only Arizona showed an appreciable gain in production. Zinc production reports in tons for the area in the first eight months of the year are as follows, according to the U. S. Bureau of Mines:

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Utah	Washington	Total
January-March	8,868	1,962	9,684	21,707	8,320	4,894	11,331	8,572	3,287	78,625
April	3,344	793	2,761	6,808	2,923	1,585	3,329	2,780	1,038	25,361
May	3,205	676	2,838	7,480	2,819	1,683	3,580	2,972	1,079	26,332
June	3,690	686	2,870	6,818	2,496	1,637	3,261	2,697	963	25,118
July	3,426	620	2,985	5,860	2,463	1,184	3,077	1,967	769	22,351
August (preliminary)	3,577	600	2,611	4,764	2,124	1,200	2,752	1,940	750	20,318

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THE WEST ON ITS WAY

ARIZONA

AIRWAYS—Arizona Airways, Inc., an Arizona corporation, filed an application for approval of purchase of Transcontinental & Western Air's Route 38 which will have terminals at Las Vegas, Nev. and Phoenix, Ariz., and stops at Boulder, Prescott and Kingman, the latter three points not now being served.

MILLING PLANT—Construction of a 135-ton milling plant for the Arizona Barite Company, at Mesa, has been started and is expected to be completed this fall. The plant will treat barite ores from the company's property up the Salt River from the Granite Reef Dam in Arizona. William F. Paine is general superintendent of mine operations.

OLD AND NEW—One of the oldest mines in Arizona—the Blue Bird mine near Mammoth, a lead-silver-copper-gold producer—has been sold and will be operated by the Blue Bird Mines, Inc., a Michigan concern. High-grade silver ore has been shipped since 1864, and the property was in almost continuous operation until the outbreak of the war.

NEW PLANT—Plastic Molded Products Company of Phoenix has started on a $70,000 manufacturing plant and will make cigarette holders and toy automobiles.

NEW ICE PLANT—The Crystal Ice & Cold Storage Co., Phoenix, will begin construction of a new $300,000 plant within the next couple of months. The plant will have a capacity of 250 tons of ice daily and will be located west of Six Points.

CALIFORNIA

BETHLEHEM STEEL DEPOT—Actual construction of a new Bethlehem Steel Mill Depot has been started at Third and Mariposa streets, San Francisco. Twelve hundred tons of structural steel, fabricated at the company's Alameda Fabricating Works, will be used in erecting the new steel products storage building. The new building, covering nearly four acres of floor space, will be one of the largest in this area.

TELEPHONE EXPANSION—Pacific Telephone & Telegraph Co. has commenced grading for its new central office building at 19th Avenue and Kirkham Street, San Francisco, which will cost an estimated $450,000. Dial equipment will be extended through the Montrose telephone exchange area.

STANDARD'S $20,000,000 EXPANSION—Standard Oil Company of California will expend more than $20,000,000 in its construction program which includes additions and improvements to refinery, storage, distributing, producing and office facilities of Standard and its domestic subsidiaries, warehousing and shipping installations, new laboratories and modernization of marketing and service station facilities throughout the West. The Richmond and El Segundo refineries will be the major recipients in the expansion program, more than 15 millions to be expended there. Nearly two millions will be spent for expansion of the Richmond laboratories and plants of California Research Corporation, Standard subsidiary.

STUDIOS FOR THE STARS—NBC will construct two new studios in a $630,000 program to provide 38,000 additional square feet of floor space at its Hollywood Radio City. Work will start during October, and will be finished in five months. The addition will be erected on Argyle Avenue near Sunset Boulevard, and will connect with the present structure.

GENERAL MOTORS ADDITION BEGUN—Construction of the new addition to the General Motors assembly plant at South Gate which, with planned installations, will increase to 29,000 feet the length of conveyors and add new ovens for paint operations totaling 3,400 in length, has started. Additions to the main assembly buildings will include a two-story extension, 80 by 960 feet, on the west side, and another, 160 by 560 feet, on the south side. There will also be an addition at each end of the administration building. Floor space will be increased approximately 50 per cent.

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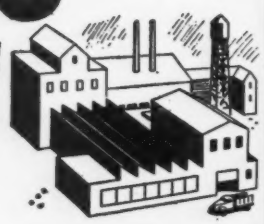

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THE WEST ON ITS WAY

BEECHNUT COMES WEST—Beechnut Packing Co., Canajoharie, N.Y., will have a San Jose plant in operation by next spring on strained and baby foods. Plant, worth $800,000, will operate the year round on 23-acre location at Phelan and Senter streets. William Cox, formerly manager of the Beechnut preserves plant, will be in charge of the new set-up. The present Los Angeles warehouse will be consolidated into the San Jose location.

MORE SOUP—Campbell Soup Company has preliminary plans for construction of a group of reinforced concrete, brick and structural steel cannery buildings in Sacramento at a cost of one million dollars. This is the first entry of Campbell into the Pacific Coast field as heretofore they have always bought their tomato concentrates from other packers.

MORE SOAP—Colgate-Palmolive Peet Co., Berkeley, plans alterations to its factory which will cost $50,000.

ELLINWOOD BUYS TWO FIRMS—Ray Ellinwood, president of Ellinwood Industries, Los Angeles, has bought California Motor Cultivator Co., Ltd., manufacturer of the Cat line of garden tractors, and National Machine Products Company. The concern plans to manufacture an adding machine and a new type can opener. National will become a division of Ellinwood and will lease space to the parent company for the production of Cat tractors. C. B. Kemble and Ray Elton, former owners of the Cat company, will remain Southern California distributors for the tractors.

MERGER—The Seaboard Metals & Supply Co., Los Angeles, has been merged with the Alvo Nut & Bolt Co., manufacturer and distributor of threaded products, and will operate under the Alvo name. George A. Wutt, former head of Seaboard, will manage the new concern which plans to discontinue manufacturing activities and concentrate on distribution. The Seaboard firm name will be used for a new supply firm dealing in stainless steel and non-ferrous items.

AIRCRAFT EXPANSION IN PEACE—Engel Aircraft Specialties, Escondido, is contemplating considerable expansion in the next six months, and has already begun construction of a hangar 80 by 140 feet, including shops and display rooms, on the Escondido Airport.

TWENTY YEARS OF PRODUCING BUSINESS FILMS

ROCKETT FILMS

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HOLLYWOOD (28) CALIF.

OLD FIRM PURCHASED—Kinney Iron Works, Los Angeles, one of the oldest and largest iron foundry businesses in Southern California, has been purchased by Kinner Motors, Inc. Name of the firm will be changed to Kinney Iron Works, Inc., and will be operated as a wholly owned subsidiary of Kinner. The name of Kinner Motors will be changed to Gladden Products Corp., as a result of its other acquisition some time ago of Gladden Products, headed by John Gladden. Gladden is now president of Kinner. The Gladden purchase brought some 20 items into the firm, including the hydraulic unit. Kinney produces all types of iron and steel castings and is licensee in the West for Meehanite, a high tensile strength iron alloy. The newly formed Gladden Products Corp. is just getting into production on its new 5 h.p. industrial engine, while other models ranging from 2½ to 15 h.p. are under development. Edward I'Anson will head Kinney Iron Works, Inc.

WEST ENTERS PLUMBING FIXTURES FIELD—A complete line of steel porcelain enamel plumbing fixtures, reported to be the first manufactured in the West, will be made in the three new buildings now being constructed at the Culver City plant of Western Stove Company. Bath tubs will weigh less than 100 pounds.

CONSOLIDATION—Globe Products Manufacturing Company, Los Angeles, announces the purchase of the machine tool division of Clayton Manufacturing Company, Alhambra. The principal product involved is the Clayton boring bar holder and accessories.

RECONVERSION—Timm Aircraft Corporation, Los Angeles, will begin production soon on a $1,000,000 order for a new-type Coca Cola vending machine. The company also will enter the vacuum cleaner production field, and tooling is already under way.

NEW FREIGHT SERVICE—Western Air Lines will begin a new air freight service between San Francisco and major out-of-state cities November 1. As equipment is available it will be extended to all cities served by Western Air.

ARMSTRONG CORK ADDITION—A structural steel frame building, approximately 120 by 100 feet in area, with galvanized iron walls, concrete foundations and floors, will be built as an addition to Building No. 3, South Gate, for the Armstrong Cork Co.

NEW PAINT FACTORY—Sherwin-Williams Company has started construction of its new factory costing $150,000 at Emeryville.

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PLATE GRIPS – Safe, positive grips in a variety of sizes for handling vertical plates or upending horizontal plates and assemblies.

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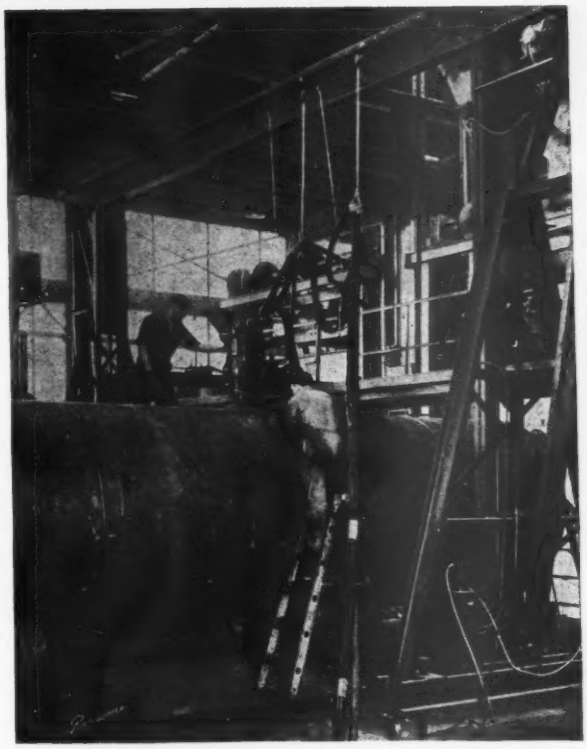

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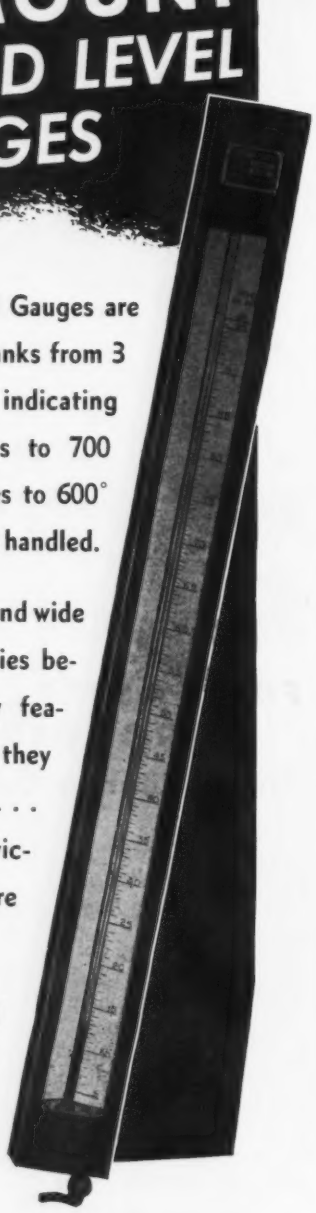
TRIMOUNT LIQUID LEVEL GAUGES



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THE WEST ON ITS WAY

ANTIMONY PLANT—Construction is well under way at the antimony smelter and oxide plant being built by the Harshaw Chemical Company at its Menardi Metals Division, El Segundo, Calif. Project involves an expenditure of $400,000, and plant will treat 1,000 tons of antimony concentrates monthly which will come from the Yellow Pine mine of the Bradley Mining Company, Stibnite, Idaho.

BLUEPRINT PLANT—A $98,000 blueprint plant will be built by the Economy Blue Print & Supply Co. at 115-119 S. La Brea Ave., Los Angeles. The building will cover an area 81 by 105 feet, will be built of reinforced concrete construction and will be heated by gas.

TO PROCESS SUGAR BEET WASTE—International Minerals & Chemical Corp. will build a large plant near San Jose for processing sugar beet pulp waste.

REFINERY BUILDING—Rubber Reserve Company, Los Angeles, is building a $70,000 refinery building at 19201 S.. Vermont Avenue.

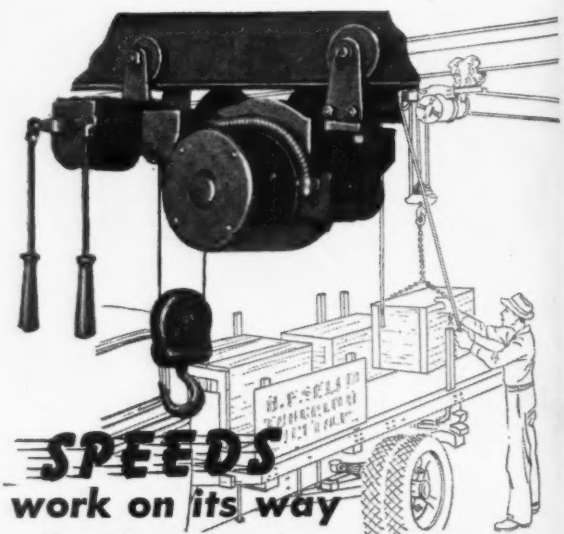
TERVEN EXPANDS—Terven Products Company, Salinas, is building a 100 by 200-foot wood frame and corrugated iron cannery building as the first step in its expansion program. Cost is estimated at $50,000.

NEW BUILDING—Construction has started on the $40,000 building for Sea Beach Canning Co., Monterey, and reduction-canning operations will begin next season. S. T. Palma is general manager.

SWEET-N-FRESH—Sierra Frozen Foods Co., Santa Ana, is a new frozen orange juice packer under the brand name of Sweet-N-Fresh. Harvey Striplin is general manager of the concern.

ADDITION—U. S. Envelope Company, Los Angeles, is building a $144,000 structure, 225 by 199 feet, at 2828 E. 12th Street, as an addition to its factory building.

TRI-STATE FOOD MERGER—A 30-million dollar sales volume will be produced by merger of Hunt Foods, Inc. with California Conserving Company. Plants included are located at Hayward, Mountain View, Oakdale, and Fullerton. Calif., Salem and Scappoose, Ore., and Puyallup, Wash.



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WORM DRIVE ELECTROLIFT HOISTS

NEW DEPARTMENT STORES—Bullocks, Inc., is building a three million dollar department store at Pasadena. The three-story structure will contain 280,000 square feet of floor space. Sears Roebuck & Co. has awarded the contract for its $1,500,000 store building in Inglewood. Saks Fifth Avenue, in Beverly Hills, plans a $500,000 addition to its present building. The seven-story side addition will cover an area 50 by 130 feet.

IMPERIAL VALLEY SUGAR FACTORY—Holly Sugar Corporation, Imperial, controlled by Carlton Sugar Co., Colorado Springs, Colo., has started construction on its new $3,000,000 sugar beet factory which has a daily slicing capacity of 2,400 tons.

FROM SAWDUST TO LOGS—Wood Briquettes, Inc., Sacramento, is building a $100,000 plant to compress sawdust into fireplace logs.

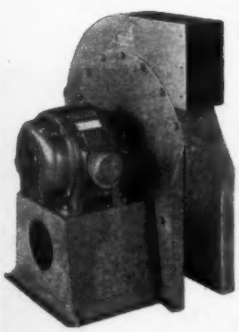
GUNS INTO TOYS—Manufacturing ingenuity is responsible for at least one new industry in California—The Associated Packers Co. at Benicia will build a new plant to make toys and garden furniture from materials salvaged from Benicia Arsenal.

SHEDS AND ICE PLANT STARTED—Construction of three large lettuce packing sheds (250 x 72 feet) and an ice plant (296 x 156 feet), including a processing shed, ice holding room, frozen storage and freezing unit, at a cost of $400,000, has been started for J. G. Marionovich, Watsonville Junction.

NEW FREIGHT CARS—Southern Pacific has placed orders with Pressed Steel Car, Pullman Standard, General American Transportation, Bethlehem Steel Corporation, Ralston Steel Car and American Car & Foundry Co. for 3,500 modern-design freight cars to cost $13,900,000 as the first step in its postwar equipment program.

NEW FACTORY IN OPERATION—Seamen Products in Burbank have commenced fabricating and processing of insulation materials for industrial and construction needs in its new plant. Fabrication is done by machine sewing and adhesives, including spot, strip and full surface cementing.

ATLAS BRASS EXPANSION—A $125,000 expansion is under way at Atlas Brass Foundry, Inc., Los Angeles, in both personnel and plant facilities for manufacturing bronze bushings, castings and bearings.



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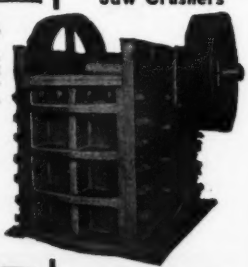

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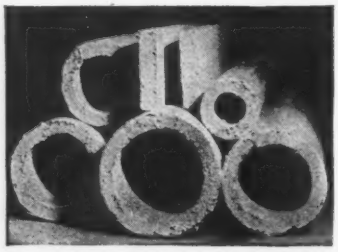

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THE WEST ON ITS WAY

CONSOLIDATED TO BUY WESTERN PIPE—A six million dollar deal, approved by the directors but yet to be ratified by the stockholders of Western Pipe & Steel Company, may soon be consummated between Western and Consolidated Steel Corporation with Consolidated buying all the assets of Western for $6,217,373. The purchase extends Consolidated's products, services and field of operations into the San Francisco Bay area, Fresno, Bakersfield, and Taft, Calif., and Phoenix, Ariz. The combination will form the largest steel fabricating unit of its kind in the United States. The plants will operate as a wholly-owned Consolidated subsidiary under the name of Western Pipe & Steel Company and no change in the present operating management is contemplated.

NEW PLANTS—Ampex Electric & Manufacturing Co.'s new plant is at San Carlos. Bayshore Paper Company's new $40,000 plant is at San Jose.

REBUILD PLANT—Bercut-Richards Packing Co. are rebuilding and enlarging the partly completed freezing plant at Sacramento, which was destroyed by fire in August, at an estimated $250,000 cost.

TRUCK TERMINALS—Valley Express Company is building a new truck terminal in Emeryville; and Key System is building a motor coach division headquarters in Richmond.

COLORADO

STEEL MERGER—Stockholders of the Colorado Fuel & Iron Co. have approved a merger with the Wickwire-Spencer Steel Co. to form a new $80,000,000 steel organization. CF&I, largest manufacturer of steel rails west of the Mississippi, is one of major bidders for Utah's Geneva steel plant.

DENVER FORD PARTS DEPOT—The Ford Motor Company, Detroit, has taken bids for the new Denver parts depot to be built at a cost of approximately $800,000. The one-story depot will cover an area of 200 by 400 feet. It will contain the parts depot, storage space for new cars, and a display room where dealers from the Rocky Mountain states may see all new models of cars and trucks.

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IDAHO

NEW POWER PLANT—The Idaho Power Co., Boise, has awarded the contract for its new $3,000,000 hydroelectric generating plant, the erection of 120 miles of electrical transmission line from Hangerman Valley to Emmett and Boise, and rural electric transmission line extensions. The 16,500-kilowatt plant will be located at the company's Salmon site in the Snake River Canyon south of Hagerman.

FERTILIZER PLANT—Plans for construction of a $2,000,000 phosphate fertilizer operation at Border, Wyoming, and at Walla Walla, Wash., or Pendleton, Ore., were laid before Grange representatives at Nampa, Idaho. Tentative plans call for a phosphate rock-processing plant at Border, an acidulating plant to use acid from North Idaho mines at Walla Walla or Pendleton. Plants would require federal aid in financing.

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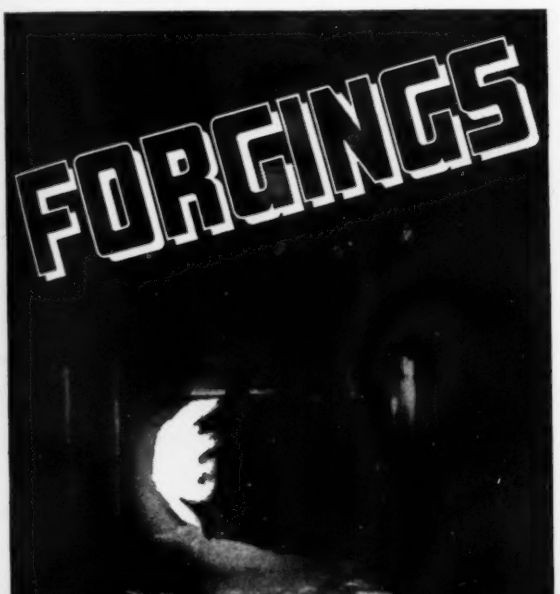
FORGINGS



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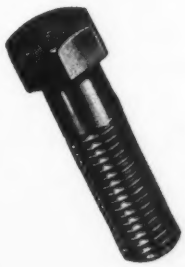

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MAGIC BOILER PRESERVATIVE

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THE WEST ON ITS WAY

NEW AVIATION FIRM—John G. Pickard, Melvin R. Hansen, and Maurice H. Greene, all of Boise, have incorporated as "Intermountain Aviation, Inc," Boise, a $50,000 firm to engage in general aviation business.

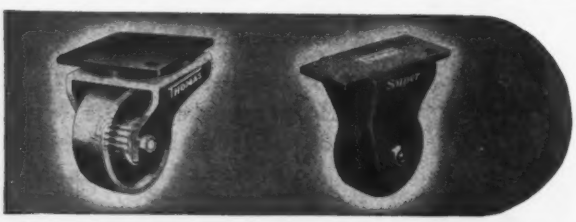
NEW CALCITE CONCERN—Scott D. Lowe, J. W. Peterson and LeRoy Webb, all of Pocatello, have incorporated for $100,000 the Idaho Calcite Company, Pocatello.

SPUR TRACK—Union Pacific Railroad has been given permission to build a spur track in Boise which will give access by the railroad to the warehouse district.

MONTANA

PHOSPHATE OPERATION CHANGES HANDS—The Consolidated Mining & Smelting Co. of Canada, Ltd., has taken over operation of the Anderson-Graveley-Luke phosphate mines near Garrison, which its subsidiary, the Montana Phosphate Company, has been running.

AMERICAN SMELTING BUYS MIKE HORSE—American Smelting & Refining Co. has purchased the entire capital stock of the Mike Horse Mining & Milling Co. from Robert P. Porter, Spokane, Wash., and associates for the reported sum of $850,000. The property, located about 55 miles northwest of Helena, consists of 30 mining claims equipped with modern facilities, including a 200-ton mill. The American Smelting concern plans to enlarge operations. Resident manager will be A. E. Haeseler, Mullan, Idaho, who will transfer to Mike Horse. Officers of the new concern are: President, H. A. Guess, vice-president of AS&R; vice-president, R. F. Goodwin, resident engineer for parent concern in its New York office; vice-president and treasurer, J. C. Emison; and secretary, C. A. Brockington, New York. H. G. Washburn, Wallace, Idaho, as general manager, is assisted by J. E. Berg, also of Wallace.



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"Years of Know How"

NEVADA

RILEY MINE AT POTOSI BOUGHT—The U. S. Vanadium Corp. has purchased the Riley tungsten mine and 200-ton concentrator of the Northern Nevada Mining Company, in the Potosi district, eastern Humboldt County. The company plans to convert the Riley mill from gravity concentration to flotation and to enlarge the plant to capacity of 500 tons a day. Concentrate will be trucked to the chemical plant at the Pine Creek project where tungsten trioxide is manufactured. The U. S. Bureau of Mines completed an extended drilling program on the site which indicated over a half-million tons of scheelite ranging in content from a half to one per cent of tungsten trioxide. The Bureau considers the property one of the most important its engineers have investigated. The mine under its former owners produced better than 100 tons of 70 per cent concentrate valued at $140,000 since the construction of a 200-ton concentrating plant begun in September, 1944. The corporation has also optioned the old Alabama low-grade gold mine in the Awakening district in central Humboldt County, at a price said to be $300,000, and the Valley View property, owned by Don Burgner of Reno.

STANDARD CYANIDING WILL RESUME—The Standard gold property near Rye Patch, Nev., owned by Standard Cyaniding Company and equipped with a cyanide mill which treated 750 tons of low-grade ore daily before 1942, will resume operations.

NEVADA PACIFIC AIRLINES SEEKS PERMIT—Nevada Pacific, owned and operated by Nevada people and its officials have petitioned the CAA to give them an air franchise which will permit stopping every day at 15 Nevada cities for passengers, mail, express and air freight. The program embraces stops and terminals serving 19 other cities and communities in adjoining states.

OREGON

MODERN DESIGN—The Columbia Distributing Company's new Portland beverage plant, now under construction, has space on its roof for an autogyro and helicopter landing field. The plant cost is estimated at $500,000, and the building will cover an area 80 by 460 feet.

Off-balance bandsaws, caused by uneven flooring, often account for uneven cuts. Not so, however, where the Johnson Metal Cut-off Bandsaw is used. The exclusive 3-point base provides rigid anchorage. No matter how uneven the flooring, the Johnson Bandsaw sets solid, prevents irregular cuts.

Other Important Johnson Features

1. Thinner blade reduces metal waste
2. Box type frame protects movable parts
3. Four speeds provide right speed for every metal, hard or soft
4. Hydraulic control insures even pressure throughout cut
5. Coolant attachment minimizes friction, prolongs blade life
6. Automatic shut-off after cut is completed

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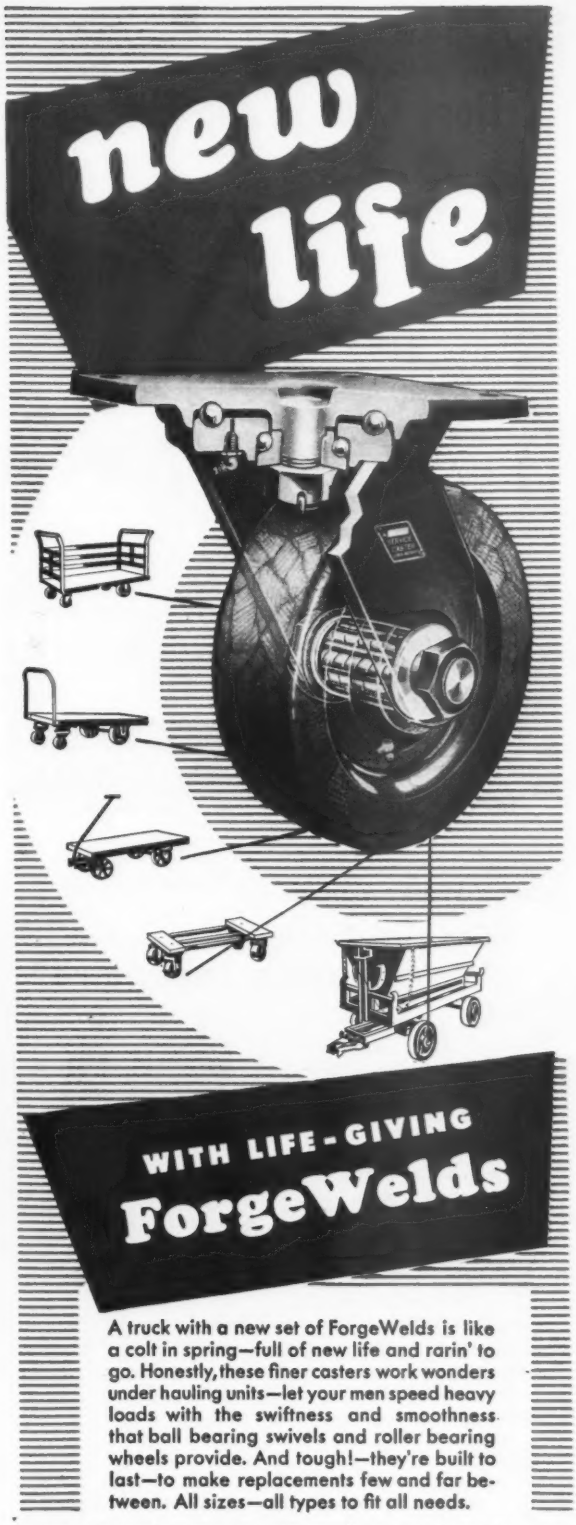
JOHNSON MANUFACTURING CORP.

5014 CHRYSLER BUILDING • NEW YORK 17, N. Y.



A truck with a new set of ForgeWelds is like a colt in spring—full of new life and rarin' to go. Honestly, these finer casters work wonders under hauling units—let your men speed heavy loads with the swiftness and smoothness that ball bearing swivels and roller bearing wheels provide. And tough!—they're built to last—to make replacements few and far between. All sizes—all types to fit all needs.

SERVICE CASTER & TRUCK DIVISION of Domestic Industries, Inc.

660 N. Brownswood Avenue, Albion, Michigan

Eastern Factory: 412-14 Somerville Ave., Somerville (Boston) Mass.

Toronto, Canada: United Steel Corporation, Ltd., SC&T Co. Division

SERVICE

POWER LIFT TRUCKS
MANUAL LIFT TRUCKS
LIFTERS • CRANES
TRUCKS & TRAILERS
DOLLIES • SKIDS
CASTERS • WHEELS

PUNCH-LOK

Hose Clamps and Fittings

LOOK, it's locked for safety

Today's Best Bet!

Keep Buying War Bonds

FOR YOUR PRODUCTION AND MAINTENANCE OPERATIONS

For descriptive catalog and name of nearest distributor, write Harry M. Thomas, Pacific Coast Representative, Dept. B, 1554 Oakland Ave., Piedmont 11, Calif.

PUNCH-LOK COMPANY

321 No. Justine Street, Chicago 7, Illinois

THE WEST ON ITS WAY

REBUILD—Timber Structures. Inc., whose woodworking plant in Portland was destroyed early in October at a $500,000 loss, is rebuilding its plant, Ward L. Mayer, president and treasurer, announced. The R. C. Newbury handle manufacturing plant at Eugene, which was destroyed by fire in August at a loss of $45,000, is being rebuilt. Newbury has taken in as partner, S. H. Seashore, Eugene attorney.

REMODEL—Boyd Coffee Company is remodeling its present building at 1336 S.W. 2nd Avenue, in Portland, plus a two-story addition. Cost is estimated at $100,000.

TRACTOR PLANT—Interstate Tractor & Equipment Co., which now has a small plant in Salem, will build a $100,000 plant on a six-acre tract in North Salem on the Silverton road. The plant will be completed early next year.

TIMBER DEAL—Coos Bay Lumber Co. has bought lumber and manufacturing interests in Coquille, Ore., for $2,500,000, of the Smith Wood Products Co., Kansas City. Changing hands were two sawmills, a plywood plant and a remanufacturing plant, together with timber holdings in Coos and Curry counties, Oregon.

VANGUARD EXPANSION—Vanguard, Inc., Portland concern producing fruit concentrates, preserves and other food products, plans erection of a 200 by 400-foot building on trackage to house operations, which will give the concern eight times more space than it now has.

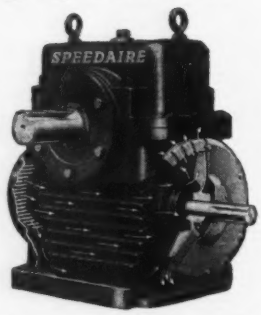
HARRIS PINE MILLS TO MANUFACTURE—Harris Pine Mills associates are beginning construction upon a furniture manufacturing plant, with building and equipment to require an outlay of from $60,000 to $70,000, east of its present box factory at Pendleton. R. L. DeVice, a returning war veteran, will have charge of the new factory.

SAWYERS TO EXPAND—Sawyers, Inc., a Portland concern, is building an addition costing $30,000 to its plant.

NEW FREIGHT TERMINAL—A motor freight terminal, costing $55,000, three stories high, and 66 by 151 feet in area, with 22 overhead doors on the first floor level and marquees over loading areas, is being built at Eugene, for McCracken Bros.

From a Works Manager:

"On the Record— We're Buying Speedaire"



"WE have installed 200 Cleveland Worm Gear Speed Reducers since 1924—have had them for an average of 18 to 20 years apiece.

"Our card-records show they have operated 24 hours a day whenever needed, delivering dependable power without requiring a dime's worth of maintenance or parts replacement.

"Those 200 Standard Cleveland Drives have written just about the best recommendation we could ask for your new Speedaire Fan-Cooled Unit. We're specifying Speedaires from now on". *Interesting Catalog 300 is complete with engineering tables and fully illustrated. May we send it?*

The Cleveland Worm & Gear Company, 3269 East 80th Street, Cleveland 4, Ohio.

San Francisco Los Angeles
Portland Seattle Denver

Affiliate: The Farval Corporation, Centralized Systems of Lubrication

Cleveland SPEEDAIRE
FAN COOLED Worm Gear Reduction Units

New Non-Slip Finish

Stanzoil Gloves

assure better work, lower cost hand safety

Objects wet with dangerous liquids are safely held by Stanzoil glove protected hands. Remarkable new non-slip finish adds assurance, speed to work, prevents costly hand injuries. Employees like the flexible comfort. You like the low cost — Stanzoils last 3 to 7 times longer in oils, acids, caustics. Standard sizes, styles, weights — black, white. For better employee relations, more production, less expense, buy Stanzoils. Write for new catalog today.

STANZOIL PIONEER

Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
267 Tiffin Rd., Willard, Ohio, U.S.A.
New York • Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

MEAT PROCESSING PLANT—Forrest Greene, 7503 N.E. Killingsworth, Portland, is building a meat-cutting and processing plant, 90 by 100 feet. Cost, including equipment, is estimated at $55,000.

UTAH

NEW DIAMOND DRILL COMPANY—Three Salt Lake City firms have joined interests in establishing the American Diamond Drill Manufacturing Company, with headquarters at 1975 South 2nd West Street. They are: Christensen Machine Company, Boyles Bros. Drilling Company, and Christensen-Diamond Products Company. Officers are. C. L. Christensen, president; C. L. Lindhe, vice-president; Frank L. Christensen, secretary-treasurer; and J. A. Jaques, manager.

RAILROAD BUILDS FOR BUS—The Denver & Rio Grande Western Railroad Co., Denver, is constructing a garage and office building costing $150,000, at 3rd South and 4th West, Salt Lake City, which will be occupied by Rio Grande Motorways, Inc., Denver. The one and two-story, brick and concrete structure, 250 by 270 feet, will have a bus and truck yard.

CEMENT EXPANSION—Ideal Cement Company, Boettcher-controlled corporation, will spend more than $300,000 for construction of increased storage and shipping facilities at its Devil's Slide, Utah, plant to take care of postwar business. Company also tentatively plans expenditures at plants in five states.

WASHINGTON

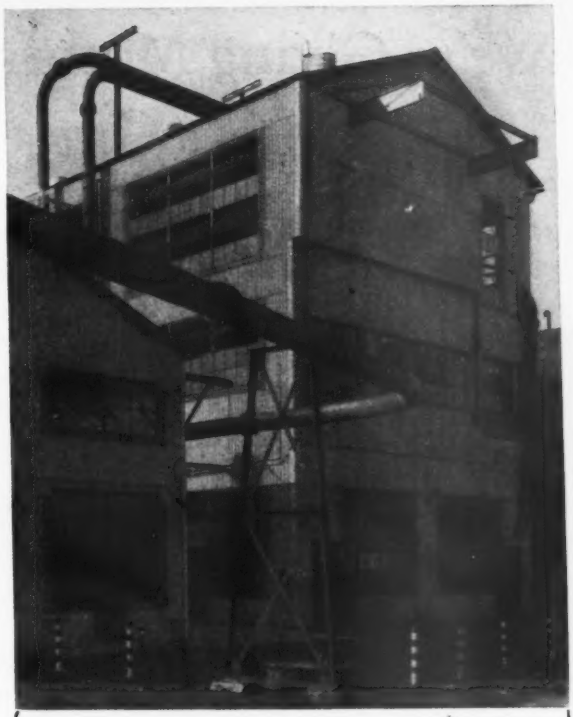
BUSY DAYS FOR BREMERTON—The Navy has selected Sinclair Inlet adjoining the Navy yards at Bremerton, Wash., as one of the proposed berthing areas for the postwar fleet. Many major combat units will be retired there. Plans are for massive concrete piers costing $8,000,000 or more. Another project is the widening of the Navy yard's main repair pier from 80 feet to 200 feet, at a cost of $4,000,000.

QUICK-FREEZE—The quick-freezing plant of Midfield Packers, Olympia, costing $100,000, is scheduled for completion by January 1.

No matter from which angle you look at the Fairbanks "Commander", you will find it a sturdily-built platform truck for heavy loads. Its double angle-iron frame and rigid construction withstand hard knocks. Heavy double ball bearing swivel casters promote quick starting under full loads, permit easy rolling and easy turning, as the operator wishes.

For specifications on "the Commander" and other Fairbanks trucks, write for Catalog 50

THE fairbanks COMPANY
393 Lafayette St., New York 3, N. Y.
320 Atlantic Ave., Boston 10, Mass.
15 Ferry Street, Pittsburgh 22, Pa.



Forgotten Walls

A story for you—if lumber shortage is delaying your building plans:

An oil company was erecting refinery buildings. They wanted siding and roofing that were *fire resistant* and *permanent,* that required *no maintenance,* that would *never* have to be repaired or painted. In other words, they wanted a material they could apply—and forget about.

They finally settled on Corrugated Asbestos Siding—large, durable sheets of cement and asbestos fibers.

Their decision proved wise. To this day, the company has *never* had to worry about its exterior walls, has never spent a dime on maintenance of its Corrugated Asbestos Siding.

MORAL: If you are planning industrial building, investigate Corrugated Asbestos Siding and Roofs, *applied by your nearest Asbestos Supply Company.* Available now.

ABSCO
ASBESTOS SUPPLY COMPANIES
Seattle • Tacoma • Portland • Spokane • Missoula

We're Giving Mothers a Christmas Gift

COME Christmas morning and a good many mothers will get a gift from us.

It will be the non-marking rubber tires we developed and molded for several Bay Area toy producers.

Mothers are not the only ones who will be happy about this development. The manufacturers are pleased because this rubber costs them no more and made their toys more saleable. The stores who sold the toys are delighted because the toys sold so well . . . and because "non-marking rubber" proved to be such a potent sales point.

We are happy because we did a good job, made a satisfactory profit and won a number of new customers.

If you use, or plan to use, rubber parts in your product, we believe it will pay you to consult us★. We have been rather successful in helping supply better materials, speed deliveries and cut costs for a rapidly-increasing number of representative Northern California firms.

OLIVER
TIRE & RUBBER CO.
MECHANICAL RUBBER GOODS DIVISION
65th and Vallejo Streets • Emeryville, California
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★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

★A new file folder, *containing factual usable data on design, production and use of Molded, Extruded and Die-Cut Rubber is available to all interested manufacturers. Your copy will be sent you on request. There's no cost or obligation.*

PORT WAREHOUSE—The Port of Longview is constructing a new warehouse, the cost of which is estimated at $35,040.

RESIN ADHESIVE PLANT—Monsanto Chemical Company has acquired a 29-acre industrial tract on the West Waterway, Seattle, where it will erect a modern plywood adhesive plant, combining the Laucks operations now carried on at Laucks plant No. 1 and plant No. 2 in Seattle. Eventually it is planned to move the offices and research laboratories to the new location.

TO RESUME SHIPPING—The De La Rama Steamship Company announces that it is looking forward to an early resumption of its services from Pacific and Atlantic Coast ports to the Philippines. It expects redelivery of its vessels from the War Shipping Administration.

DAIRY PLANT—Golden Rule Dairy Co., Seattle, is building a $130,000 dairy with 161 by 101 feet in area with a part basement, 70 by 50 feet in area, brick faced, masonry walls, concrete floors, tile floors in work rooms and asphalt tile covering in offices, yard areas to be paved.

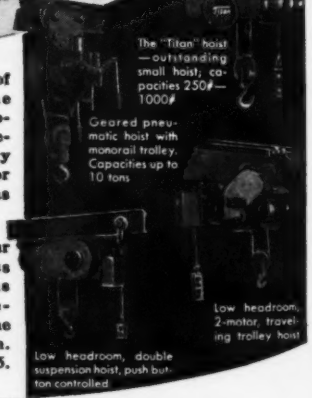
NEW OFFICES—The Mineral Exploration & Research Corporation of Yakima, Wash., has moved its main office to West 900 Seventh Ave., Spokane 9. The company is making preparations for the installation of a mill at its newly acquired Stowell gold mine on the South Fork of Clearwater River between Golden and Elk City, Idaho.

WYOMING

REAL ESTATE BOARD PLEADS FOR HOUSING—With reconversion to peacetime production in full blast in Cheyenne, with many skilled employees being added to its industries, Cheyenne has developed a critical housing shortage which is holding up its development. The Cheyenne Real Estate Board is paying for full-page advertisements in Wyoming papers seeking housing. The Board is offering to list apartments and rooms at "absolutely no charge." Already one Cheyenne industry has been forced to move part of its operation to another city because employees could not find housing in Cheyenne.

Detroit

★ ELECTRIC HOISTS
★ PNEUMATIC HOISTS
★ ELECTRIC TRAVELING CRANES


The "Titan" hoist —outstanding small hoist; capacities 250#—1000#
Geared pneumatic hoist with monorail trolley. Capacities up to 10 tons
Low headroom, 2-motor, traveling trolley hoist
Low headroom, double suspension hoist, push button controlled

THE extensive range of Detroit Hoist and Crane designs provides quick, economical handling of materials, and maximum safety for men and materials for practically any conditions of use.

Send in an outline of your handling problem; let us provide recommendations based on 40 years' experience in hoist and crane design and application. Ask for Bulletin 725.

DETROIT HOIST AND MACHINE CO.
8215 Morrow St., Detroit 11, Mich.

WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Forrest G. Harmon

Forrest G. Harmon, former executive vice-president of Pacific Tube Co., Los Angeles, is head of the newly organized **Harmon Products,** Los Angeles, which occupies a warehouse at 3311 E. Slauson Avenue. Firm is supplying carbon, alloy and stainless tubing in seamless type and special lines in welded tubing of unusual sizes and wall thicknesses.

Facilities of **Edward D. Maltby Company,** distributors for Southern California and Arizona of leading makes of bearings, chain and oil seals have been expanded with addition of **John F. Larson,** who has many years experience in the petroleum and chemical industries in Southern California since 1920, as comptroller and office manager, and **A. J. Swisler,** power transmission engineer for **Whitney Chain and Manufacturing Company,** who now makes his headquarters with the Maltby concern, Southern California distributors for Whitney Chain products.

Robert Hetherington & Son Inc., Sharon Hill, Pa., has opened a West Coast office at 5607 West Adams Boulevard, Los Angeles. Sales will be under **C. E. Fisher,** and engineering under direction of **L. E. Massie.**

D. B. Martin, Seattle, has been appointed New York City representative of the Boeing Aircraft Company where he will develop foreign and domestic sales. His office will be at 30 Rockefeller Plaza.

John A. Ruthven is manager of the **Aircraft Tools Company,** Los Angeles, a new organization formed to sell and distribute the products of **Aircraft Tools, Inc.** Office of the new company is at 1811 South Hope Street, Los Angeles.

Hoffman Radio Corporation has opened a new San Francisco office in the Western Merchandise Mart, with **Walter J. Epstein** as San Francisco district manager. Hoffman Radio is running "full blast" to produce radios and phonograph combinations. The firm has revamped its sales organization. R. J. McNeely, sales manager, has been elevated to general sales manager. Dan D. Spence will be assistant sales manager.

Lee LeClerq has been appointed sales manager of **Morck Brush Manufacturing Company,** San Francisco. Mr. LeClerq has been with the Morck firm for the past 10 years in the sales department.

Albert J. Lilygren Company, San Francisco, now represents **Rix, Inc.,** New York, who manufacture a line of abrasives. They also represent **Certified Gauge and Instrument Corp.,** Long Island City.

Robert "Bob" Browning has been appointed by Neely as special field engineer providing technical and engineering assistance for electronic equipment accounts represented by the firm on the West Coast. Browning was radar field engineer for Western Electric and before that audio equipment design engineer for RCA.

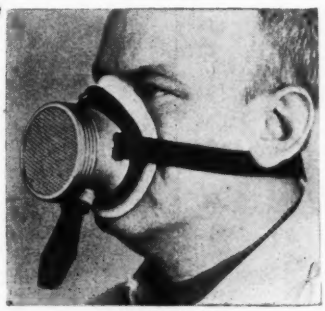
R. L. Erlin

Richard L. Erlin, a veteran of 15 years in the steel business, and assistant to general sales manager J. L. Ashby of **Kaiser Company, Inc.,** has been appointed manager of sales service for the Kaiser company with headquarters at Oakland.

C. F. Borden

C. F. Borden, former manager of general sales service department of Geneva Steel Company, has been named district manager of sales in northern California, for **Kaiser Company, Inc.,** iron and steel division, with headquarters at Oakland.

"Pulmosan"
CHEMICAL RESPIRATOR
for
PAINT SPRAYS AND LIGHT ORGANIC VAPORS AND ACID GASES



MODEL "M3C"

Safeguard Your Man-Power against "Breathing Hazards"

There is a type of "Pulmosan" Safety Respirator to meet YOUR requirements. . . . Don't take undue chances with contaminated air . . . have your workers breathe easily and safely with a "Pulmosan" Respirator.

The model shown here is equipped with a chemical cartridge that neutralizes paint spray and light organic vapors and acid gases. An additional felt filter is provided to be used where dust and vapors exist simultaneously.

• *Many other models and types available . . . write for descriptive literature . . . No obligation*

Sharpe MANUFACTURING COMPANY
1224 Wall Street PRospect 4368
LOS ANGELES 15, CALIFORNIA

TUBBS VICTORY CORDAGE COMPANY

No. 1 SISAL ROPE
NOW BACK!
AVAILABLE TO YOU WITHOUT RESTRICTIONS

Government controls have now been lifted from Sisal rope. It will be welcome news to rope users that you can now purchase Sisal for every purpose.

Present restrictions continue on Manila rope but we hope it will not be too long before you see the familiar Tubbs Extra Superior Manila trademark once again.

In the meantime, you will find Tubbs VICTORY Brand No. 1 Sisal a dependable rope. Having 75% of the strength of Manila, Victory is made with the same exacting care in our mills.

for VICTORY Rope

TUBBS CORDAGE COMPANY
SAN FRANCISCO
PORTLAND CORDAGE COMPANY
PORTLAND • SEATTLE

TRADE WINDS *(Cont'd from Pg. 109)*

G. L. Crow C. M. LeCount

G. L. Crow has been elevated to district manager of the marine section of **General Electric Company** in the Pacific district, and **C. M. "Dad" LeCount** to consultant to the marine section, both offices which have been newly created to facilitate the handling of G.E.'s contacts with the marine trade in the west. Both men will make their headquarters in the company's San Francisco offices in the Russ Building.

Mr. LeCount, well known in west coast marine, naval and shipping circles, has had nearly 20 years of experience as "father" of G.E.'s selling activities to San Francisco Bay Area shipyards.

Edwin M. Ames has been made manager of the **General Electric Supply Corporation's** Sacramento office at 12th and "S" Streets. He has been with the company in many important sales positions in the San Francisco Bay Area for the last 20 years.

Leonard E. Barton has been upped to resident manager of the **Spencer & Morris** Seattle offices in the Dexter Horton Building. Barton has been associated with the firm of West Coast engineers and manufacturers of materials handling systems in various departments and his appointment extends the facilities and services of the firm to the Pacific Northwest.

Lt. Cmdr. William Randall, a native of Carson and former resident of Reno, has been named general manager of the Nevada branch of the **Western States Aviation Corp.,** a sales and servicing agency of Brown Motors in Reno. The company sells and services Stinson and Aeronca aircraft in Nevada.

F. J. (Jack) Wear has been named sales manager of **Special Equipment Co.,** Olympia, Wash., well known equipment house, with headquarters in the Terminal Sales Building, Portland. He was formerly with **Anderson-Barngrover,** Portland.

The **Industries Supply Co.,** San Diego, has taken over the contracting department of the **Plant Rubber & Asbestos Co.,** and is now installing insulating materials on a large scale. The supply firm also acts as distributor for Plant materials in San Diego and Imperial Counties. The new department is managed by **Hollis Joy** and employs about 30 men.

Charles E. McCuan has been appointed manager for engineering sales at **Aero-Coupling Corporation,** Burbank, where he will co-ordinate and develop the applications of their flexible hydraulic lines and fittings in automotive, industrial, marine, refrigeration and aircraft requirements as well as products and maintenance.

Marshall Lasher will serve as assistant to **W. W. Glosser,** vice-president of Hubbard and Company, Pacific Coast Division with offices and western plant located at Oakland, Cal.

George R. Sommers has been made Pacific Coast sales manager of **Sylvania Electric Products, Inc.,** New York. He has been with the company since 1940.

Carl Jackson, former assistant manager, has purchased **Independent Foundry Supply Co.,** Los Angeles, which will continue to represent national lines of foundry supplies and equipment, as well as to manufacture some 18 products under its own label.

Hotchkiss-Gilkey Company, Spokane, Wash., is the new Sealmaster Ball Bearing distributor for the **Stephens-Adamson Mfg. Co.** in the Spokane area. **Brown Bearing Company,** Seattle, has recently opened a branch store in Portland, Ore.

Acme Equipment Company, distributors of the Standard Conveyor and Louden Machinery lines of materials handling equipment, and local fabricator for Standard, are now established in larger quarters at 840 Harrison Street, San Francisco.

R. P. Emery, Salt Lake City district sales manager of the **W. P. Fuller Co.,** has gone to Spokane, Washington, as district paint department manager of the company. Mr. Emery has been with the company 22 years. **E. R. Penning** who was district sales manager in Spokane will assume Emery's former duties at Salt Lake.

L. F. "Bill" Lutz replaced **J. L. Quisenberry** as advertising manager for the **Axelson Manufacturing Company,** effective Nov. 1, when Mr. Quisenberry resigned to go into business for himself. He had been with the Axelson organization for the past 10 years.

Kerotest Manufacturing Co., Pittsburgh valve and fittings manufacturer, has established a new warehouse in Los Angeles. **J. A. Swaton,** with Kerotest for over 20 years, will be district manager for steel valves and **J. A. Norris** will be district manager of brass division.

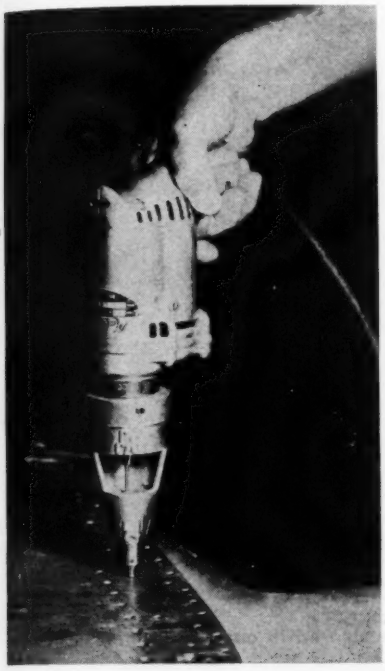
Richcraft Co., Chicago, maker of building papers, has opened a sales office in Oakland with **C. A. Cook,** West Coast manager.

Pacific Aircraft Company, a partnership of **Ivar Akselsen, Norman Larsen** and **Tirey L. Ford,** a new aircraft sales firm, will occupy extensive hangar and office space at the municipal flying field at Oakland. The company holds the California, Oregon, Washington, Nevada and Arizona distributorship for Beechcraft.

THE SHOWCASE

292

Drill Guide Pressure Foot—A change to aluminum construction and a new design of the PEC Drill Guide pressure foot makes the product lighter, easier and faster to use. Used with hand motors in jig template drilling, it provides a means of utilizing steel metal template stock in place of heavy drill plates and bushings in production line assembly drilling by indexing to



standard size holes in the template. Standard size tips may be interchanged. Templates can be duplicated quickly and may be used as assembly jigs as well. *Products Engineering Company, Beverly Hills, Calif.*

293

Sealed Heat Treatment—Holden baths provide a sealed atmosphere with the following benefits: bright hardening and minimum distortion. Furnace No. 1 may be used for hardening tool steels, alloy steels, or for any application where a neutral bath is used in the range of 1350-1750° F. By substituting spare pots, this furnace may be used for hardening stainless steels or liquid carburizing. Furnace No. 2 which is normally used for hardening high speed steel, may also be used for stainless as well as high carbon-high chrome steels, copper brazing, or for any purpose where neutral heating is required at temperatures from 1750-2300° F. Furnace No. 3 can be used for quenching high speed steels, or tempering of air hardening steels. May also be used for small batch isothermal annealing with Furnaces No. 1 and No. 3. *The A. F. Holden Company, New Haven, Conn.*

294

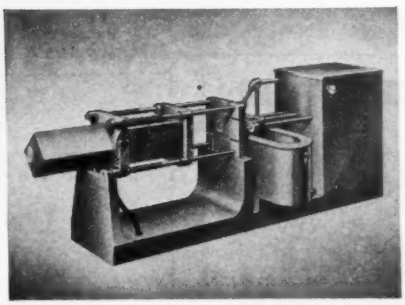
Silastic—The Dow Corning Corporation announces the commercial availability of Silastic, a silicone rubber, produced in various stocks for molding, extruding, coating, and laminating. Also available are Silastic stocks compounded for coating glass or asbestos cloth to produce flexible, water-proof, heat stable, oil resistant gaskets, diaphrams, tape and electrical insulation which is nontracking, arc and oxidation resistant. *Dow Corning Corporation, Midland, Michigan.*

295

Slime and Lime Scale Remover—A new chemical development with lime solubilizing, fungistatic and detergent properties designed to inhibit slime growth and control formation of lime scale deposits in evaporative condensers and evaporative coolers is announced by Oakite Products. The material is a white powder, completely soluble, odorless and non-toxic. One ounce added to 10 gallons of make-up water in sump is said to keep water sweet, prevent slime and hard lime scale from forming on coils, keep equipment clean and minimize need for maintenance. A free 4-page special service report is also available. *Oakite Products, Inc., Los Angeles, Calif.*

296

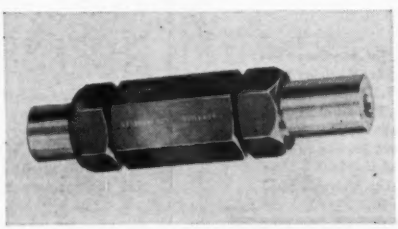
Automatic Die Casting Machine—An entirely new line of die casting machines has been developed by H. L. "Red" Harvill. In contrast to a "gooseneck" which is submerged in a pot of molten metal, the Harvill machine embodies a metal feeding device which feeds a continuous stream of the molten alloy into a horizontal injection chamber. All of the new Harvill die



casting machines are intended for use on a production line. The fabrication of die castings is now placed on the same basis as any other machine tool operation and may be integrated with a production line operation to accomplish higher output and substantially lower costs. *H. L. "Red" Harvill Mfg. Co., Vernon, Calif.*

297

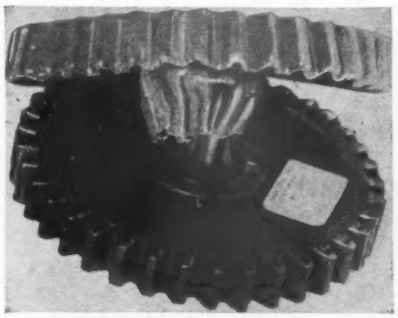
Dubl Duty Gage—This addition to the Schrillo line of precision tools has a light aluminum alloy collet type handle which firmly positions a set of wire type cylindrical plug gages. It enables the user to reverse the gage after it has worn



under the allowable limit and takes full advantage of the unused gaging surface that was formerly in the handle. There are no tapers, no drift pins and no split handles. *Schrillo Aero Tool Engineering Company, Los Angeles, Calif.*

298

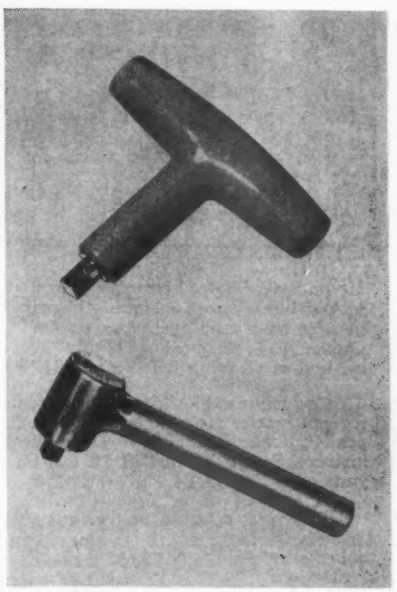
Thermo-dip—A new plastic strippable compound for protecting parts from corrosion and hazards of handling has been developed by Eronel Industries. Extreme simplicity of application, by dip tank, reduces the unit cost for maximum part protection. It provides a safe,



amber-colored transparent coating that completely resists humidity, impact, abrasion and corrosion; it can be easily removed, is applicable at temperatures ranging from 280-325 degrees and is reclaimable. It is also efficient as a stop-off coating for use in the plating industry. *Eronel Industries, Los Angeles, Calif.*

299

Torque Wrenches—Manufacturers reconverting to the production of washing machines, refrigerators, stoves, radio and other appliances will be interested in the Jotee and the Joel, torque wrenches developed originally for lighter precision assembly on aircraft. Constructed of solid, sturdy aluminum they can be pre-set at

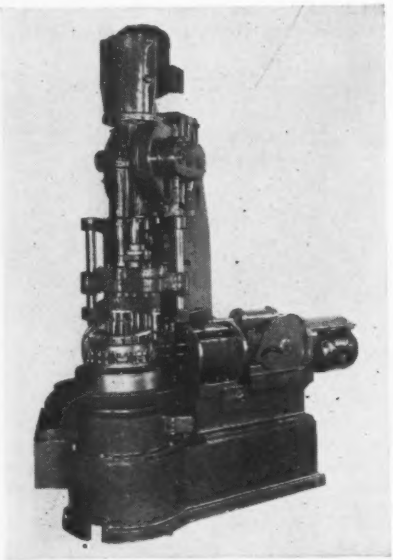


the factory to any torque within a range of 5 to 40 in./lbs., and may be reset in the plant tool room when specifications change. Errors in judgment are impossible because tools release positively when predetermined torque is reached. May be used in plastics where damage to materials from overtightening is high. *Jo Manufacturing Co., South Gate, Calif.*

SHOWCASE *(Cont'd from Pg. 111)*

300

Indexing Machine—High production of automotive parts, domestic appliances and farm implement parts, including drilling, reaming, milling, spot facing and tapping on automotive parts, etc., can be reached with use of the Millholland No. 5A Automatic Indexing Machine. The ma-



chine operates automatically and the operator is required to load and unload only. *W. K. Millholland Machinery Company, Indianapolis, Ind.*

301

Wind-Up Machine—This machine, a complete, self-contained unit will handle flexible insulated wire and cable in diameters up to 1½ inches and other materials in comparable sizes. Standard speed ranges are 25 to 150, 40 to 200 and 60 to 240 feet per minute, and its tension values are from 5 to 1000 pounds. Built originally to draw wire and cable through an automatic saturating and lacquering system, the machine is supplied either as part of such a system or as an individual unit. Standard model employs a 42-inch reel, but a special size to take a 60-inch reel can be supplied. *Industrial Oven Engineering Company, Cleveland, Ohio.*

302

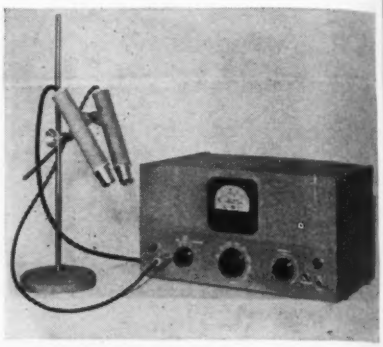
Pneumatic Hammer—A small, powerful pneumatic hammer, delivering some 13,000 blows per minute and operating on less than 2 cubic feet of air at 80 to 100 psi, and weighing less than two pounds, the "Bantam Bully" fits easily in the hand. A pistol grip handle, of dimpled aluminum casting, gives the operator comfortable control of the rapid-firing power of the hammer. The valve control, in pistol trigger position, adds to the ease of control. Tools for the hammer, of which a wide variety are available, are loaded in a quick-acting ball-and-channel locking chuck. A quarter-turn of the knurled nose of the chuck locks or releases any of the tools. Cold chiseling of metals, peening, welding flash stripping, light scaling, light riveting, forming and finishing, routing of all kinds, paint and rust removal, are some of the many uses for this hammer. *Superior Manufacturing Company, Cleveland, Ohio.*

303

Rotary Pumping Unit—A steam-jacketed rotary pumping unit of improved design for handling sludge and other viscous liquids, having a capacity of 500 GPM at 150 psi pressure and powered by a 75 HP gearhead motor with a speed of 155 RPM on the drive shaft, is announced. The pump construction is iron, bronze-fitted and the entire unit is mounted on a cast-iron base. The steam jackets are suitable for pressures up to 125 psi and are located on both heads. Units in capacities of 50, 90, and 200 GPM, with gearhead motor or reduction gear drive are also available with steam-jacketed heads of this construction. *The Blackmer Pump Company, Grand Rapids, Mich.*

304

Speed Measured Accurately—A new electronic tachometer developed by Hewlett-Packard Company, which consists of a photo cell and light source hook-up, used in conjunction with an electronic frequency meter, can be used to



measure the speeds of moving parts over a wide range, from about 300 RPM (5 RPS) to 3 million RPM (50,000 RPS). The machine provides an instantaneous record of the continuous speed and eliminates the danger of making multiple or fractional errors. *Hewlett-Packard Company, Palo Alto, Calif.*

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10″	112#	9′5″	to	37′10″	8″	31#	8′3″	to	25′ 3″
10″	89#	25′3″			6″	15.5#	17′	to	69′
10″	49#	16′6″	to	33′ 2″	6″	18#	8′6″	to	59′ 3″
8″	24#	8′6″			6″	20#	9′9″		
8″	27#	8′6″			6″	22.5#	6′4″	to	49′ 6″
8″	48#	8′3″	to	33′ 6″	6″	25#	8′1″	to	32′ 6″
8″	58#	9′6″	to	25′ 3″	5″	13.5#	8′1″	to	25′ 7″

$2.30 per 100#

PLATES

Gauge	Width	Length
3/16	62″	363″
5/16″	36″ to 62″	246″ to 483″
3/8″	12″ to 92″	123″ to 663″
7/16″	68″ to 86″	309″ to 363″
1/2″	32″ to 96″	132″ to 405″
9/16″	76″	339″ to 585″
5/8″	43″ to 98″	153″ to 345″
3/4″	74″ to 110″	147″ to 459″

$2.30 per 100#

MILD STEEL BARS — FLATS

Gauge	Width	Length
1/4″	2″	27′
1/4″	3″	20′ to 35′
3/8″	4″	21′
3/8″	5″	20′
3/8″	6″	10′ to 30′
1/2″	4″	21′
1/2″	6″	22′ to 25′
1″	4″	15′

$2.30 per 100#

TEES

12″	37#	30′	to	50′
12″	40#	30′		
10″	29.5#	26′3″	to	51′ 3″
9″	48#	36′	to	4′
9″	27.5#	20′	to	3′
9″	23.5#	30′		
9″	25#	9′3″	to	47′ 3″
7″	17#	14′	to	42′ 6″
6″	20#	9′3″	to	27′10″
5″	10.5#	11′9″	to	35′ 4″
5″	38.5#	9′3″		
5″	13.5#	10½′	to	27′
4″	8.5#	30′	to	33′
4″	15.5#	9′9″	to	39′ 6″

$1.75 per 100#

ANGLES

9″	x	4″	x	1/2″	30′		
7″	x	4″	x	1/2″	28′	to	30′
6″	x	4″	x	1/2″	8′	to	49′
6″	x	4″	x	7/16″	7′	to	30′
6″	x	4″	x	3/8″	8′	to	50′
6″	x	4″	x	5/8″	47′		
4″	x	3½″	x	3/8″	10′	to	41′
3¼″	x	3½″	x	3/8″	49′	to	50′

$2.30 per 100#

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YOURS FOR THE ASKING

1839

For the Trade—Three booklets put out by the Clark Tructractor people are offered readers this month; two deal with materials handling while the third is a copy of the *San Francisco Charter* published in booklet form, with a dedication by the firm president. The materials handling literature is of two types. One, the first issue of the *Clark Tructractor News*, is published by *Preston Faller*, Seattle distributor, and graphically displays material handling methods of several Seattle firms who use Clark equipment, including lift machines at the Boeing Aircraft Company, where the world's largest commercial installation of lift machines is in operation. Limited number of copies available from Faller. The third booklet treats the subject analytically from the points of view of top management, purchasing agents, production engineers, sales managers and transportation executives. Copy of this booklet and the Charter available from *Clark Tructractor Division, Battle Creek, Mich.*

1840

Cellulose Acetate—A revised edition of the technical reference booklet on cellulose acetate, including a new section on its use in thermoplastic laminates, has just been issued by Hercules Powder Company. In addition to information on plastics, the booklet suggests many other uses of Hercules cellulose acetate in rayon, film and foil and specialty lacquers. Tables include data on properties of cellulose acetate, solvents useful with it and compatability of resins with cellulose acetate. *Hercules Powder Company, Wilmington, Del.*

1841

Chain Bulletins—Two bulletins have been issued by the Chain Belt Company of Milwaukee. Bulletin No. 455 is devoted to the care of chains and lists the line of Rex Oil Field Pumps. Bulletin No. 45-1 describes features of the Baldwin-Rex Roller Chain Belts, together with a table of specifications of the more popular sizes with their list prices. *Chain Belt Company, Milwaukee, Wis.*

1842

Ships of the Merchant Marine—A pocket-sized and attractive brochure whose 30 pages are filled with pictures, data, and silhouette models of the principal types of vessels comprising the United States' merchant fleet. Introduction by Admiral Chester W. Nimitz. Information on major branches of the Merchant Marine as a service, definitions of various terms, and "how vessels are named," are features of the booklet. *Tide Water Associated Oil Company, San Francisco, Calif.*

1843

Audio Amplifier Catalog—A 24-page catalog describing its audio amplifiers is in preparation by Newcomb Audio Products Company, Los Angeles. Known throughout the western states for seven years, the company offers for national sale eight new audio amplifiers. *Newcomb Audio Products Company, Los Angeles.*

1844

Lubricating System—"When you reconvert," is the title of an illustrated four-page folder put out by the Farval Corp. Basic facts are set forth in a compact summary showing how the Farval System operates, with statements of specific results attained through its use. *The Farval Corporation, Cleveland, O.*

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